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2 November 1981

**USSR REPORT
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AIR DEFENSE FORCES

TRAINING ACTIVITIES

Vigilance Training Discussed

Moscow KRASNAYA ZVEZDA in Russian 10 Jun 81 p 2

[Article by Maj Gen R. Aver'yanov: "A Special Atmosphere"]

[Text] Regular, scheduled classes were underway in the antiaircraft missile battalion. They were suddenly interrupted by the signal to muster, however. The site immediately came to life. The doors of barracks and classrooms swung open. The missilemen rushed to their battle positions. New information on the air "enemy" soon arrived from the reconnaissance and target designation station. A few dozens of seconds later the specialists at the missile vectoring station headed by Senior Lieutenant S. Kalugin vividly demonstrated their skill. Performing with precision and coordination, the operators promptly picked up the small, high-speed target. The launcher control officer immediately gave the command to "destroy" it....

The task was given an excellent rating. The good combat characteristics of the modern antiaircraft missile system, the specialists' training, their finely coordinated actions and the morale of the men had a great deal to do with this. Whatever activities are conducted in the battalion--whether it be a meeting or a special-subject evening, a political information briefing or a talk--the need to be on the alert, to increase vigilance is brought out all through the proceeding. And the formal ceremony performed when the men go on alert duty has itself a considerable emotional affect upon the fightingmen.

The most important events in the nation and abroad are constantly explained on the duty shifts. The missilemen are reminded of the requirements set forth in documents governing the procedure for standing alert duty, and the best specialists' know-how is publicized. The main attention is devoted to the individual work performed with the men, to the creation of what I would call a special atmosphere, in which the slightest sign of disorganization or complacency would be intolerable.

Things such as this formerly occurred, however. Senior Lieutenant S. Shapovalov, as an example, worked enthusiastically and performed skilfully at the range. And then suddenly he cooled off toward the training and stopped trying so hard. The change was immediately noticed by Major P. Red'kin, commander of the radiotechnical battery. Shapovalov openly admitted that he did not see any need to "meet the norms" in the ordinary drills. In a serious test he would not let them down.

Major P. Red'kin should be given due credit. He not only explained the error of the officer's thinking, but he also recognized in this incident symptoms of complacency and conceit which had developed in some of the fightingmen after they had received an excellent rating for their firing at the range. The commander suggested that this matter be discussed at a party meeting. The discussion was earnest and based on principle.

What, specifically, was discussed? The fact that one rarely heard the voices of the party group organizers, Komsomol group organizers or agitators during the drills and exercises, and the fact that competition possibilities were not fully applied. The training and simulation equipment was not used with adequate effectiveness, and the practice of introducing unexpected hypothetical problems was not always followed. This was apparently what was creating a mood of complacency in certain specialists, especially the young ones.

Or take the ratings given for alert duty. Were they always objective? This question, raised by Senior Lieutenant Kalugin, was also the subject of discussion at a party meeting.

It was learned that some of the duty shift chiefs were giving higher ratings than were deserved, that they were taking into account only the fightingmen's special training.

Immediate steps were taken in the battalion. Heightened demands were made of the exercise and drill quality. The visual agitation was renewed.

They found what I consider to be yet another sure way to convince Senior Lieutenant Shapovalov and certain other specialists how intolerable are the slightest manifestations of complacency in the service. A record which reproduced the sounds of an actual battle with an enemy was played during the next drill. One could hear sharp commands and reports, and the rumble of launching missiles resounded. Battle noise simulators and smoke generators were used at the position.

The specialness of the drill did not consist of this external aspect alone, however. It was planned so that many of the fightingmen had to perform duties in related specialties. Not all of them passed this difficult test. Nor did Senior Lieutenant Shapovalov perform with absolute confidence. He and others understood from the bitter but instructive lesson that there is no limit to skill, nor can there be.

I have discussed this example in such great detail for a reason. I think that it graphically illustrates the work style of the commander and the party organization for indoctrinating the fightingmen in a spirit of highest vigilance. It is conducted in the battalion with imagination, flexibility and focus.

After all, they could have "worked over" Shapovalov at the meeting and left it at that. He could have received in response to his honest admission a furious "bawling out." That sometimes happens. Just what would this have produced in Shapovalov's case? How would the officer, highly interested in the service but at the same time, proud and impulsive, have behaved after that? This was the primary thought of Major Red'kin, an experienced indoctrinator. And he found the correct pedagogical solution.

In the CPSU Central Committee's Accountability Report to the 26th party congress Comrade L.I. Brezhnev underscored the fact that "...the truth is solidly absorbed when it has been experienced and not simply taught." These much-encompassing words have

extremely profound meaning. They refer to the intensification of the practical focus of all indoctrinational work, of its linkage with life, to increasing its emotional impact upon the men. This is just how the experienced indoctrinators--commanders and political workers--operate.

Unfortunately, we still sometimes encounter a simplified approach to the indoctrination of the fightingmen. In some cases numerous measures are carried out, while the return is small.

In one of the subunits a special-discussion evening and a technical quiz were conducted, a lecture was presented on the military-political situation in the world, the activists were briefed, and other, generally needed and useful activities were conducted the evening before the subunit was to go on alert duty. Did they leave a mark on the minds of the fightingmen, though? Probably not, because they were conducted in an unimaginative and boring manner, following the same plan which was used the year before, 2 years before, and were poorly related to the subunit's life, to the specific tasks which the personnel would be performing in the days ahead. This was in great part the fault of Captain N. Budanov, the political worker, who took a formal approach to the job.

As an example, at the special-discussion evening, which dealt with the succession of traditions, the presentations by the participants lacked enthusiasm and involved generalities. And the subject could have served as the basis for an inspired and spirited discussion. They could have invited a veteran of the Great Patriotic War, a former member of the unit or a prominent worker to speak that evening. They could have shown filmstrips on a heroic theme and scheduled activities by amateur performers. This would have created many additional difficulties with respect to arranging the evening, of course. But then, it would not have been simply an activity for the infamous "checkmarks" in the plan, but an event in the life of the subunit's fightingmen, one which they would have remembered for a long time.

Or take the following matter, which I consider to be of no little importance. Everyone knows that some of the veteran specialists become habituated to the performance of alert duty, a phenomenon generally inherent in the human mentality. It most frequently appears in those cases in which the intensity of party-political work has dropped.

The opposite also occurs, however. As they prepare to go on duty, many of the young specialists burn themselves out, so to speak, even before they begin. Their actions reflect constraint and vacillation. A lack of solid skills makes itself felt.

Consequently, we need to take a differentiated approach to the indoctrination of the men, always taking into account their professional training level, their length of service and psychological traits. Captain Budanov and the other officers in the sub-unit are aware of this. In practice, however, the following indoctrinational method is most frequently used. When a young operator makes a mistake or runs into a snag in his combat work, he is immediately replaced by a more experienced specialist. After that there is some hesitation about putting him at the screen, especially during important exercises.

And what is the result of this? The specialist becomes accustomed to waiting on the "back-up" bench and loses his enthusiasm without ever having spread his wings. I

believe that it is far more important to look closely into the causes of each error, to explain the consequences, encourage the individual and permit him to acquire self-confidence.

We should devote more attention to the veteran specialists as well. They are still being left in the background, as though they have already achieved all there is to achieve and understand it all. In fact, however, the subunit frequently received a lower rating in the qualification exercises through the fault of specialists 2nd class or even 1st class.

Concreteness is the core of the indoctrinal work. It should be based upon constant study of the men, of their personalities and conduct and should have a certain "overall linkage," so to speak. The activists' work will amount to little, let us say, if they are not able to conduct a meaningful talk, to make up visual agitation, to provide the young fightingmen with effective assistance at a difficult moment. And we still encounter this lack of focus in the indoctrinal work.

When Lieutenant V. Klimenko, duty shift chief, was asked what he planned to do to motivate the men to perform alert duty in an exemplary manner, the officer could not provide a clear and exhaustive answer. He did not have at hand any sort of notes on how the men performed during their combat work or whether they were fulfilling their socialist commitments. And without this it is difficult to have a substantive talk with the men, to sum up the results of the duty work.

Incidentally, even the rating methods used there were not the best. If a crew successfully tracked an important target, then it deserved a high rating. Other aspects of the combat work--the specialists' discipline, the time required to perform this or that operation--were essentially not taken into account. When the rating fell, it was difficult to guess the cause. The causes of drops in ratings were not always indicated in the reports.

These are not unimportant matters, as it might appear at first glance. We can talk about a high level of vigilance dozens of times from a speaker's platform, but if the ratings do not objectively reflect the contribution made by each of the fightingmen to the performance of the common mission, if the men cannot see any prospects for growth or any possibilities for advancement, such appeals are not worth a cent.

It is not a simple art to affect the men so as to evoke a passionate response in their minds and hearts or to maintain close, spiritual contact with them. And this art must be tirelessly mastered.

Surprise Element in Training

Moscow KRASNAYA ZVEZDA in Russian 19 Jun 81 p 2

[Article by Col I. Dokuchayev, Order of Lenin Moscow Air Defense District: "The Unexpected Hypothetical Problem"]

[Text] Everything was ready at the site to repel the "enemy" air raid: The equipment had been thoroughly checked out once more and the specialists on the command post crew had received final instructions from the launcher control officer. Every missileman was experiencing some excitement--they were to perform a difficult mission.

Missilemen in the subunit commanded by Major G. Fokin had also taken up their posts. It was assumed that they would not be active in the initial stage. The main burden of the battle with the air "enemy" rested upon the crews in the adjacent subunit.

Major Fokin and his men carefully monitored the situation, prepared at any moment to come to the aid of their neighbors. At first the battle promised no surprises. A few minutes later things became highly complicated, however: In a hypothetical situation all of the targets entered firing range practically simultaneously.

Major Fokin's men, like their neighbors, found themselves in the very crucible of the battle. They demonstrated enviable self-control and skill in this complicated situation. The air "enemy" was destroyed.

Typically, the unexpected hypothetical situation introduced by the exercise director was a serious test not only for Major Fokin's men--the mission conditions simultaneously became more difficult for their neighbors, who could no longer count on outside help. There was also additional work for the command post specialists, who had to distribute the targets simultaneously entering the firing zone, extremely rapidly and with maximum precision. In short, the unforeseen variation in the exercise was the best "inspector" of the missilemen's preparedness to engage in a modern, dynamic battle with an air "enemy."

In my opinion, the example described convincingly demonstrates the fact that the degree to which the setting for exercises or drills approaches actual combat depends to a significant extent upon the nature, the specific features and the liveliness of the hypothetical situations, which create the essential combat intensity, and upon how well they are conceived.

I recall an incident from my career as a commander. The personnel had worked hard to prepare for the tactical exercise involving a live firing. Many hours of drilling, practicing and studying the equipment had been performed to ensure that when the crucial test came the missilemen would be able to cope successfully with any tasks. I happened to be present at a training session for the launchers. Outwardly, everything appeared to be going well: The crew members were performing their operations accurately, the launcher engines rumbled uniformly and terse commands and reports sounded above the position.

As I analyzed the actions of the launchers, I recalled the firing range. I had been there more than once. I recalled the dusty, biting wind and the rumble of the launching missiles. It was a difficult test, no question about it. How would these soldiers, who were now loading the launchers with such enviable skill, stand the test? These training sessions are conducted under almost ideal conditions, after all, good weather and regular breaks making it possible to regain one's strength and prepare to perform the next operations.

For the next training session we worked out and set up a more difficult situation. Naturally, the trainees did not know about this. At the appointed time the launchers set about their work once again. And once again the silvery arrow of a missile moved smoothly along the launching rack, and once again the crew members gave their precise reports. All of a sudden a blast was heard off to the side, followed by another a short time later. A trail of smoke rose into the air from the launcher.

I noticed that the launchers, who had just been performing each operation with brilliant precision, became excited and glanced around in alarm, expecting new explosions. Their performance deteriorated markedly. It was more typical of new men than of veteran specialists. This is how the unexpected hypothetical situation affected them. It was a good lesson for the commander of the launching subunit. He began to fill the exercises and drills with unexpected hypothetical problems and non-routine situations which might occur in modern combat.

I later observed the launchers in a difficult test at the range. They successfully completed the difficult combat training firing.

Many of the commanders use diverse hypothetical situations to achieve good effectiveness in the exercises and drills. It is important that these hypothetical situations not be anticipated by the trainees, however.

I once had the opportunity to attend a training session conducted by Major V. Minaylov. The officer is rightly considered to be one of the best launcher control officers in the unit and a skilful methods expert.

This time as well, when the drill with the command post crew was in full swing, he unexpectedly complicated the mission. In the hypothetical situation the air "enemy" had chosen a very clever tactical procedure.

The decision had to be made in a matter of seconds. They could wait until the target had entered the zone before launching the missile. This would leave so little time for bombarding the target, however, that it might not be destroyed. There was a certain amount of risk that the mission would not be completed. The officer in charge of the command post crew took a risk, which was justified in the situation. He selected a more complicated but effective alternative, which made maximum use of the missile system's combat capabilities to strike at the "enemy" when it was still a considerable distance from the defended object.

This decision involved a certain risk. Even the slightest disruption in the crew's work could produce complications. At the same time, however, there were undeniable advantages to this plan--the "enemy" would not be expecting to be fired upon from that distance and direction. The element of surprise would be achieved. Perhaps it should be mentioned that Major Minaylov had complete confidence in the skill and stamina of his men. He was not wrong to do so.

And what about the risk? Why, in actual combat a commander finds himself more than once in situations in which he has to demonstrate boldness, decisiveness and a readiness to take a justified risk. It is one of the most important tasks of any commander to develop these valuable qualities in the officers in the day-to-day combat training.

Unfortunately, some exercise directors make little attempt to find new combat techniques, preferring to stick to the standard situations to which everyone has long since become accustomed. I once had the opportunity to observe the members of one subunit in a training session at the position. The training officer watched until the launcher was basically ready for the launching and then gave the command "Gas!". In an instant the crew had on gas masks, in which they completed the few remaining operations in the combat work.

I subsequently learned that every training session was completed in this manner. Hypothetical problems were introduced formally, but they had almost no practical effect. The launchers had become accustomed to hearing the familiar command at the designated time. After this everything would go along in the usual manner. What sort of surprise element was this, when every move had been rehearsed in advance? It remained only to mechanically run through the same old procedure of operations. With this sort of attitude toward the job any unexpected occurrence could throw the specialists into a state of confusion. This became apparent when an inspector gave the command "Gas!" in the very heat of the combat work. The launchers spent a considerable amount of time regaining their former level of coordination.

A study of this drill also made me think about the selection of the hypothetical problems introduced during the training. For some reason certain commanders have come to like only the command "Gas!". In the exercises they use it in all cases when they want to increase the combat intensity of the training. It is essential to teach the fightingmen to operate successfully in gas masks, of course, but this does not exhaust the range of known techniques for creating a situation approaching actual combat. In many units and subunits skilful use is made of such hypothetical situations as the breakdown of individual systems, the simulation of fires at the position, attacks by groups of "enemy" saboteurs, unexpected flashes of light during nighttime operations, explosions of simulation charges and the broadcasting over the loudspeaker system of the sounds of sub-machine gun fire.

It is worth underscoring the fact that maximum benefit is only produced in the combat training by those hypothetical problems which accurately reflect the nature of modern combat and conform precisely to the "enemy's" tactics and combat capabilities. Arbitrary, independent activities, the ignoring of the laws of combat and ill-conceived haste are poor helpers in the training work. They are what let Major A. Dubrovskiy down, when he served as tactical control officer in an exercise. In an attempt to achieve the maximum in the combat work the officer arbitrarily complicated the conditions for performing the assigned mission. The battle plan which he proposed did not conform in any way to either the tactics or the capabilities of the air "enemy." Naturally, this "innovation" had a negative effect upon the team's performance in destroying the small, high-speed target.

What does this example tell us? First of all, it demonstrated the need to give careful thought to each hypothetical problem and to measure it carefully against the missions to be performed and the demands and laws of modern combat. Simple improvisation not backed up with thorough preliminary preparation can bring harm to the work.

There is also little to be gained from hypothetical problems which are presented solely on a theoretical level and do not require specific or vigorous action on the part of the trainees. We encountered deficiencies such as these recently, when we checked out the training of personnel in the subunit commanded by Major V. Ol'nev. No special effort was made in the subunit to think of ways to make the training more intensive and to saturate it with elements of actual combat. Hypothetical situations such as the following were frequently introduced in the exercises and drills: "The 'enemy' is preparing to strike...." There was no tension at all at the position when this situation was announced, however--quiet reigned around the combat equipment, and the soldiers walked leisurely among the trenches.

I want to point out the fact that deficiencies in the combat training of Major Ol'nev's men were brought to his attention before this. At one time he was to have begun correcting the deficiencies, but a subsequent inspection showed that his efforts were of short duration. The routine organization of the training gained the upper hand once more.

Unfortunately, some commanders do not always do things to complicate the situation in the exercises and drills. Unexpected hypothetical situations are introduced more frequently by the inspector than by the officer directly involved in the training of the men. One has the impression that some instructors fear most of all that something to which they are not accustomed might happen. And for the most part they are accustomed to standard situations, and this keeps things simple--there is no need to waste time thinking up hypothetical problems, searching for an unexpected procedure or creating a complicated situation. What could be more simple than waving a hand toward the position and saying "Fire!"? And this takes care of the "critical" situation. Such methods, however, hardly develop in the men the ability to perform precisely and calmly in an actual combat situation.

A hypothetical problem in the hands of a commander or an officer in charge of an exercise, a class or a drill is an extremely effective means of improving the fightingmen's combat training. And this means should be utilized skilfully, actively and creatively.

Training Facility/Methods Described

Moscow KRASNAYA ZVEZDA in Russian 20 Jun 81 p 1

[Article by Sr Lt Yu. Moskovskiy: "The Method for Conducting Classes--Comprehensive"]

[Text] At first the barely discernible roar of jet engines sounds over the field of "battle." It is soon replaced by a ringing sound, which fills the air. One has the impression that he will soon hear the sound of explosions and deadly fragments will whistle through the air.

The "enemy" aircraft barely comes within range of the portable antiaircraft missile system, when an arrow-shaped shell rushed out to meet it.

"Target destroyed!" Private S. Tishkin reports to the platoon commander.

Captain A. Mikhnenko, observing the antiaircraft gunners' training, looks at his stopwatch and enters the firing time in his notebook.

"One more candidate for the title of best specialist," the captain says. "Many of the men are now meeting the standards for an excellent rating in all respects. We were not doing well in this area before, however...."

Lieutenant Yu. Oleynik, in charge of the exercise at the training "point," adds:

"We were not doing well because during exercises such as these one antiaircraft gunner in the platoon would work on the norm, while the others would stand around and watch. The next person would then go over to the trainer, and the others would continue to watch...."

Yes, the methods formerly used for conducting the training for antiaircraft gunners were not effective enough. With the field trainer, which had three launching racks, the platoon commander could not keep the men active during every minute of training time. Efforts were made to put into use an additional, stationary trainer set up in the classroom, but this changed very little: A classroom is not the field, after all.

One of the officers once calculated that only around 10 percent of the antiaircraft gunners were training toward the combat norms simultaneously in the platoon classes. They learned to monitor the air, to issue target indications, to determine the target's parameters and recognize the type of target, to select the zone for launching the missile, and so forth. In short, each of them went through something like training stages leading to the main task--the missile launching.

They lost a tremendous amount of time, however, waiting for their turn at the trainer.

The idea of improving the methods was then conceived. Senior Lieutenants V. Piskunov and S. Gorchakov conferred with Major P. Peshiy and suggested that the training stations be arranged in accordance with the training stages leading to the missile launching. Their initiative was supported.

Four training stations were set up for the comprehensive classes. At the first station the antiaircraft gunners use a trainer to work out their functions during the launching of a missile. At the second, they work on the tactical norms. At the third station they study the arrangement and the technical characteristics of the missile and the system. At the fourth station they work on the fire preparation norms, wearing equipment to protect them against weapons of mass destruction, and study the silhouettes and the characteristics of air attack means. The platoon commander is the instructor at the main training positions, while the best-trained sergeants are in charge at the other "points."

What have the new methods produced? First of all, they have made it possible to work out on a comprehensive basis the tasks involved in the tactical, fire, special technical and physical training, under field conditions approaching actual combat to the maximum degree possible.

A comprehensive exercise always begins with the signal "Muster!". The main training station has four trainers, each with three launching racks. The platoon commander is assisted by specially trained sergeants with an excellent mastery of the combat specialty. They serve as instructors and teach their know-how to the young fighting-men.

At this "point," at the beginning of each training hour, the best antiaircraft gunner performs a launching on a so-called psychological trainer, where only the missile flight is simulated--all the rest is real. Only those who have taken first place in the competition in the regular comprehensive exercise and have been awarded the challenge pennant "To the Best Antiaircraft Gunner" earn the right to perform this launching. Private S. Tishkin, for example, has repeatedly won this title.

Nor are those soldiers in whose performance on the trainers the conscientious instructors/sergeants detect errors ignored. Private N. Vanzin, as an example, attempted to

launch a missile with the rear cover of the launching rack closed. As he summed up the performance there at the first training "point," the platoon commander noticed the shortcoming and advised the soldier to practice preparing the system for firing more thoroughly at the second training station. Private Vanzin did just that when he worked on the tactical norms.

Designed to last 5 or 6 hours, a comprehensive class is filled with action, and all of the personnel experience the maximum load. At the same time, the changing of training stations every hour makes the training less tiring on the fightingmen.

Captain Mikhnenko admits that there are still shortcomings and unresolved questions in the organization of the antiaircraft gunners' training.

"We teach the fightingmen to launch the missiles from a standing position," the officer says. "In actual combat, however, they will have to fire at enemy aircraft from a trench, a combat infantry vehicle or a tank. This is why we are trying to set up new training 'points'."

There are still many questions pertaining to the improvement of methods used for the comprehensive tactical-fire exercises for the antiaircraft gunners. The main task is to improve their quality and effectiveness. Comprehensive training enthusiasts Majors P. Peshiy, V. Shcherbina and V. Bal', Captain A. Mikhnenko and other officers, warrant officers and sergeants are working on this.

It is gratifying to know that in the final exercises all of the battery's antiaircraft gunners received ratings of only "good" or "excellent" for their performance of the certification launchings.

The editors asked Colonel A. Dianov, a staff officer in the Ural Military District, to comment on this article.

The new methods for training antiaircraft gunners described by Senior Lieutenant Yu. Moskovskiy have produced good practical results. First of all, the intensity of the training process has increased markedly. The time required to go through individual aspects of the training program has been reduced. The integration of the classes has actually laid the foundation for the antiaircraft gunners' tactical-fire training, and therein lies its particular value.

During the camp assembly new methods were demonstrated for organizing the classes and were recommended for adoption in those same air defense subunits.

These training methods need to be further improved, of course. The material training base for the tactical-fire training is being renewed in the air defense subunits. Comprehensive monitoring zones are being created. In short, the creative quest continues, and our officers' desire to make a fitting contribution to the improvement of the subunits' combat readiness is clearly manifested therein.

I would like to mention the fact that officers V. Piskunov, B. Peshiy, A. Mikhnenko and Yu. Oleynik, who were mentioned in the article, have been rewarded for their successes in the training of antiaircraft gunners and have been promoted to higher positions.

Night Training Exercise

Moscow KRASNAYA ZVEZDA in Russian 8 Jul 81 p 1

[Article by Col F. Biryulev, Red Banner Odessa Military District: "What Simplifications Produce--Night Training for the Troops"]

[Text] The antiaircraft missile subunit knew about the forthcoming night exercise in advance. The exercise plan and the group of training tasks had been carefully worked out. There was time to thoroughly prepare the men and the equipment to perform in the nighttime situation, to provide everything necessary to conduct the training in a well-organized manner, at a high level and with great benefit for the trainees. This was not done, however.

The signal indicating the beginning of the training sounded at night, according to the plan. The fightingmen began working on the combat training tasks. A group of officers visiting the subunit from higher headquarters detected numerous shortcomings and deliberate simplifications, however, which impaired the training work. The launching crews, as an example, loaded the launchers under brilliant electric lights, which violated the blackout requirements but made it easier to perform the operations. The tasks involved in setting up the equipment, at the decision of Major Yu. Malyutskiy, the officer in charge of the training, were only theoretically performed in general, because of bad weather.

When, at the staff officers' demand, the subunit began to perform the combat training tasks in strict accordance with the plan and official recommendations, it turned out that not all of the specialists were prepared to perform their jobs at night. Some of the officers were unable to set up operational control over the performance of their men or to prevent errors, and were slow in making decisions. The tempo of the work and coordination in the performance of crews dropped markedly.

The training exercise was unsuccessful. It was unsuccessful, as a study showed, because preparations for it had been conducted on a formal basis, without taking into account the peculiarities of combat work performed during the dark hours of the day.

The results of the first month of summer training have indicated such failures in other subunits as well. In other cases the crew, the platoon and the battery would perform smoothly and with such good coordination in the daytime that one had to admire their work, but they seemed to be different people at night--their actions showed constraint and vacillation, and the men made mistakes. The specialists are not meeting the norms, of course. What is the matter? A study has shown that the level and the quality of nighttime training sessions are lower in those cases in which they are prepared for hastily and for the sake of appearance. When some of the commanders organize the combat training they do not take into account the fact that nighttime training requires thoroughly conceived organizational measures, special methods, appropriate material support and precise objective control. If only one aspect of this multi-faceted work is ignored, breakdowns and lack of coordination immediately show up in the work. In other cases the performance of the planned training tasks is switched to nighttime in a purely mechanical manner, without any additional adjustments. And, as a rule, a simplified situation is created to make certain that the training can be entered on the record. Actual aircraft flights are not used in these cases.

Night training has a special place in the professional training of the personnel and makes heightened demands of the commanders and staffs. They must give prime attention to the instructors' methodological preparation.

The methodological procedures for using the instructors during nighttime training sessions have been systematized in unit "X," for example. These procedures are studied by the officers in their command training and are perfected in demonstration training sessions. The officers in charge of the training adopt the know-how of Major A. Zverev, the unit's best methods expert. During their drills they work on their functions until they become automatic and they acquire practice in monitoring the performance of subordinates. Complex situations requiring the ability to apply their knowledge and skills as a whole are created for this purpose. Rapid and unerring orientation on the terrain as they perform a march or select the site for the fire positions, as an example, or the organization of precise interaction with adjacent subunits.

The officers/instructors there are taught how to compile night training plans, which provide for the use of material support means. These are very important elements. Experience has shown that certain shortcomings in the night training for the personnel occur precisely because a number of commanders are unable properly to plan the training, to take into account the peculiarities of combat work performed in the dark.

At first glance it might not appear to be a difficult matter to set up a guard at the position or to specify what the fightingmen are to do in case of attack by a ground "enemy." Inspections have shown, however, that many omissions exist in these areas as well. In one night demonstration exercise attended by members of many different subunits, the role of a ground "enemy," by agreement with the commander of an adjacent unit, was assigned to a squad of airborne troops. Under cover of darkness they penetrated the battalion's position undetected, "took out" the guard and put several systems at the missile complex "out of action." This was the price of negligence in setting up the guard and defense for the subunit's position. Such examples demonstrate the fact that any omissions at night entail far more serious consequences than in the daytime.

Numerous questions also arise when preparing subunits for nighttime operations, which require research and creative search. This applies first and foremost to the study of the psychological peculiarities of military work performed at night, when the individual is working "without" an extremely important self-monitoring organ--his vision--and he has to perform dozens of diverse operations almost by feel. In addition, his reactions are dulled and his motor functions are slowed. What techniques and methods should be used to compensate for these phenomena--and extremely rapidly at that? Scientifically based recommendations, tested in practice, are needed.

Even the specific features of the work performed by such specialists as operators, whose functions, one would think, would be less complicated by nighttime conditions, need to be thoroughly studied. In fact, fatigue and psychological stress increase at night. This naturally affects visual acuity and precision in the performance of the operations. How much does this phenomenon influence the end results of the work, however, and how can its negative effects be avoided or reduced? In order to arrive at the correct answers and to work out effective recommendations, we need a vast amount of statistical data and systematic recording of the results of nighttime training sessions. A study of these will help to establish patterns in the personnel training, the causes of specific shortcomings and ways to eliminate them.

In the excellent launcher battery commanded by Captain V. Romanov, as an example, exercises have been worked out on the basis of summarized data from night exercises and are being successfully employed. Their purpose is to train the fightingmen to perform successfully at night. And they are producing good results. During combat training launchings of missiles at the range the launcher crew commanded until recently by Senior Sergeant S. Seredniy had to load the launcher under various conditions: in the daytime, at night, wearing protective equipment and without the equipment. They significantly bettered the norms in all cases. The other teams demonstrated approximately the same training level.

And so, with a skilful and creative approach to the organization of the combat training, the specialists acquire knowledge and skills enabling them to perform their functional duties equally successfully at night or in the daytime.

Tactical Training Exercise Described

Moscow KRASNAYA ZVEZDA in Russian 14 Jul 81 p 1

[Article by Lieutenant Colonel B. Karpov, Red Banner Baltic Military District: "Under Complicated Conditions"]

[Text] A battle with an air "enemy" today is a brief one. It frequently lasts only a matter of minutes. These minutes demand maximum exertion of effort on the part of the air defense troops, however.

A dynamic and instructive situation developed in the last tactical exercise, in which missilemen, airmen, radar operators and signalmen took part. The air 'enemy' rushed toward the defended object from several directions at once. The airways were suddenly filled with interference.

Junior Sergeant A. Valiyev, radar operator, was the first to detect the air targets. This was not an easy matter, for there were several scheduled aircraft in the detection zone, and a large area of the screen was affected by images of local features. The experienced specialist immediately took a fix on the new electronic blip, however, and accurately reported the information to the command post.

The air situation was becoming more complicated by the minute. The powerful stations were intercepting more and more targets in the sky with their invisible rays. Some of them would appear for only a few moments and then disappear in the whitish bands of interference. In this situation it was very important to ensure that all the information was reported promptly. And Captain L. Gulevich, specialist 1st class and chief of the crew, never for a second lowered his control over the specialists' actions. His commands were prompt and precise, appearing to anticipate slightly the development of events.

Captain Gulevich is a veteran officer. His combat skill has been tested more than once in the difficult problems of tactical exercises. He has been awarded the medal "For Combat Merit" for his successes in the combat and political training and his good results in the training and indoctrination of the personnel. The commander has singled him out for his practical competence and his ability rapidly to recognize the air "enemy's" plan and adopt a well-based decision.

And that is what he did this time as well. Considering the tactical situation, the officer decided to move the radar station to a new position. The time available for this was extremely limited. Captain N. Baburin, Senior Lieutenant N. Shaykhutdinov, Junior Sergeant A. Chekryzhov and Privates S. Zharkov and A. Rukavishnikov performed skilfully during the march and when preparing the station for its combat work.

Gulevich's decision justified itself entirely. The area in which he set up the radar station proved to be the most advantageous, tactically speaking. It enabled them to detect targets at maximum range and to transmit information on the targets from the first fix. The station crew headed by Lieutenant I. Krasnonosov also worked well in the exercise. Not long before that the young officer had received numerous complaints about disruptions when operating the station in a complicated air situation. The commander thoroughly analyzed his errors and compiled a special schedule for developing skills in the conduct of combat work. The planned and systematic exercises brought results.

...In the meantime the situation had grown even more complicated. The targets had begun altering their courses and altitudes, and the interference became even more dense. A few minutes later the interceptors entered the air battle. The last act in the exercise was performed by the missilemen, however, who attacked the "enemy" with the full power of their fire.

Following the exercise I asked some of the participants to share their impressions on the battle just fought. This is what they had to say:

Major A. Valeyev, military sniper/pilot:

We pilots learned about the targets taking off, after we were already in the air. The precision with which the fighter controller was issuing instructions made it clear that the radar operators were transmitting highly accurate information. This gave us greater confidence that we would be successful.

I carried out a radar search, while attempting to maintain the assigned course and altitude. The blip from a target suddenly appeared on the screen. The target was maneuvering, but I managed to lock onto it. The rest was up to the equipment, so to speak.

The second pair was led by Captain Aleksandr Naydenov, military pilot 1st class and commander of an excellent flight. He is an excellent fighter pilot, who loves his work. One might say that the flying profession is a family affair for him. Aleksandr's brother, Sergey Naydenov, also serves in our regiment. He also commands a flight and is a military pilot 1st class. The communists elected him secretary of the subunit party organization.

Captain Aleksandr Naydenov and his wingman skilfully intercepted the second target.

The engineers, technicians and junior air specialists also contributed their bit to the success. The tactical situation developed in such a way that they had to prepare the missile for flight within an extremely short period of time. They passed the test with honor.

I would also like to put in a good word for Lieutenant Rashchupkin, who was my wingman. The young pilot was participating in such a complicated exercise for the first time. He made an all-out effort to prepare for it. He performed calmly and skilfully in the air.

Officer N. Kropin, master of combat skill and gunner on a crew of the antiaircraft missile battalion:

Target blips appeared from various directions on the circular scope position indicator. And then the screens became covered with interference. It soon became clear that the air "enemy" intended to penetrate to their target at low altitudes.

The crew rapidly prepared for the battle. It promised to be a difficult one, but our task was simplified somewhat by the fact that the interceptors destroyed a number of targets on the distant approaches.

Our turn soon came. At my command Captain Yevdokimov, vectoring officer, and Junior Sergeant Kul'magambetov, Private 1st Class Borovikov and Private Asachev, manual tracking operators, went to work. With respect to their performance I can only say that I did not have to prompt or to hurry them. The specialists did everything exactly the way it should be done. Nor were there any complaints about the other missilemen. I would like to praise many of them, however. Especially Lieutenant Ivan Mukin. His performance in the difficult situation was beyond all praise. Incidentally, several years ago he began his service as a private in our subunit. He later returned to the subunit, now an officer. Warrant Officer Leonid Chasnyk, who has been awarded the medals "For Excellence in the Military Service" 1st and 2nd degrees, also began as a soldier in our subunit. He too distinguished himself in the exercise.

What can I say about the battle itself? Everything went the way it always has: the search for the target, the lock-on, the missile launching, the vectoring.... No battle is like another, however, and each one provides new experience and valuable skills. We learned a great deal from this exercise as well.

Shortcomings in Regiment's Training

Moscow KRASNAYA ZVEZDA in Russian 23 Jul 81 p 1

[Article by Lt Col A. Yurkin: "Missed Opportunities"]

[Text] This antiaircraft missile regiment was the initiator of socialist competition in the Air Defense Forces. A great deal is done in the unit to better organize the training and indoctrination process and to see that the commitments are completely fulfilled. Unfortunately, there are also deficiencies and unresolved matters, which make the competition less effective.

Lieutenant V. Makarov does not have a very high opinion of the skill of Senior Lieutenant A. Mel'nik, the regiment's best vectoring officer.

"Now Shmarlin was a real ace," he said during our talk. "What could one learn from Mel'nik, though?"

Senior Lieutenant Yu. Sharlin is now studying at a military academy. Makarov, his replacement, uses many of his work methods and his advice. They still serve as his reference points for achieving combat skill. As far as Mel'nik is concerned, Makarov feels that he was simply lucky. He always had the latest set of simulation equipment at hand, and he only had to practice. He polished up his skill that way. Put Makarov into the same situation, and he would achieve even more.

I have to admit I had not expected the young officer to have such an opinion of the professional training of the unit's best specialist. Perhaps Mel'nik's training level was not so high after all, and his expertise was of no interest to the others?

At regiment headquarters I learned that Senior Lieutenant Mel'nik's victory in the competitions for first place among the unit's vectoring officers and then in two other competitions conducted on a larger scale was certainly no accident. He demonstrated profound competence in the technical and special training. Nor did he have any equals in the combat work performed with the equipment. The members of the judging panel--the most experienced and disinterested specialists in the highest class--found not a single error in Senior Lieutenant Mel'nik's performance. This is perhaps all I learned from the regimental staff workers about the best vectoring officer. What did his know-how consist of, specifically, and how instructive was it for others? I received no answers to these questions.

How was Mel'nik's know-how rated in the subunit? Major V. Prokopenko, battalion commander, himself a master of missile vectoring in the not-to-distant past, believes that Mel'nik has achieved the pinnacle of combat perfection. Many of the subunit specialists have learned from him how to operate the equipment and how to make maximum use of all its combat capabilities. His know-how in organizing drills is also worthy of attention. They are instructive and are conducted in complicated circumstances, with every specialist performing the maximum load.

The method of critiquing the exercises based upon objective control data, proposed by Mel'nik, has been adopted in the subunit. Another innovation--so-called professional training schedules for the command post specialists, which make it possible to evaluate the intensity of their work, the nature of their errors, the effectiveness of their combat work and their load during a training hour, exercise, week or month--is also actively employed. There are numerous other innovations of interest to many of the young specialists.

Unfortunately, nothing is known about these at regiment headquarters. Senior Lieutenant Mel'nik's know-how has not been thoroughly studied by anyone or recommended for adoption in the other subunits.

The proven method of having the competition frontrunners speak to their colleagues is used extremely rarely in the unit. Specifically, Mel'nik could share his work methods with the vectoring officers of other subunits and show how he uses the simulation equipment to create complex variations in the combat work.

For the sake of fairness I should say that there are examples of an efficient approach to the adoption of progressive know-how in the regiment.

Some time ago the battalion commanded by Major V. Kondrat'yev was famous for the combat training of its launcher numbers. The fact that the subunit used numerous

innovations in the technical servicing of the missiles contributed greatly to the achievement of this success. At the recommendation of Colonel V. Parshikov, unit commander, the staff set up demonstration classes, using the battalion.

The thoroughly prepared classes with the launching batteries' commanders and teams produced good results. The battery commanded by Captain A. Musiyenko, for example, which adopted the know-how of the outstanding specialists, won the recent competitions. The skill of the launching crews in the other subunits also improved markedly. The regiment now has many crews capable of confidently fulfilling the combat mission under the most difficult conditions.

Unfortunately, these are isolated examples. This is a pity. The regiment has many men in charge of various areas, whose service duty, so to speak, demands that they react sensitively to everything new and progressive brought out in the training and competition process. And not simple to react, but to help the outstanding specialists to develop, to grow strong and acquire wings. Therein lies one of the most important conditions for the achievement of good results.

"All information on the competition among our subunits is entered in special logs," I was told by Lieutenant Colonel I. Yushchuk, regimental chief of staff. "It is summarized and submitted to the commander."

And the staff does in fact record the competition results promptly and efficiently and with adequate thoroughness. Is its role limited to recording functions alone, however? The staff has highly skilled officers and could study and summarize the know-how of any outstanding specialist or subunit and put it to use promptly and efficiently. This is still rarely done, though. And the need for this is extremely acute.

Senior Lieutenant V. Kochetkov, battery commander, for example, is interested in the methods used by Captain Musiyenko for training the launcher numbers. He accidentally heard the officers talking about them. To know about expertise by hearsay is one thing, however, and to see how the outstanding methods expert organizes the training sessions and how he achieves a high degree of rivalry is another thing entirely. Why could headquarters not set up a demonstration class? This possibility has still not been utilized, however.

The know-how of the launcher crew commanded by Sergeant S. Lipkin has also been held back. This crew has distinguished itself with its exemplary training and discipline, and it has no equals at the combat position. How did the sergeant achieve this? How do his men manage to better the norms significantly? Lipkin himself could answer these questions if only the staff would set up demonstration classes for the commanders and crews or would permit him to speak at the monthly sergeant's day. These methods of publicizing know-how have not been activated in the unit, however.

Personnel in the regiment's political section were able to tell me very little about steps to publicize outstanding know-how. Captain M. Kozyarik, deputy chief of the political section, showed me a single poster/leaflet on the instructor of a Marxist-Leninist training group. Even this turned out to have been printed by a higher political organ. The political worker did say that material had been prepared dealing with the practical organization of competition. It had never reached the subunits, though.

This situation does nothing to publicize the outstanding specialists or their achievements. It is therefore not surprising that few in the unit know about the right-flank competition participants or their experience. The situation sometimes becomes ridiculous. Junior Sergeant S. Pelyashok could not name the crew of the best reconnaissance and target designation station in the regiment, although he and his men were competing with that crew.

As I left the regiment I recalled my talk with Lieutenant Makarov and his opinion about Senior Lieutenant Mel'nik's skill. The young officer is mistaken. There is something to be adopted, something to be learned from the unit's best specialist. And it is a pity that neither Makarov nor many of the other officers in the unit have any specific knowledge of his expertise.

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NAVAL FORCES

SUBMARINE TRAINING AND RELATED ACTIVITIES

Submarine Rescue Exercises

Moscow KRASNAYA ZVEZDA in Russian 7 Jun 81 p 2

[Article by Capt 3d Rank S. Bystrov: "The Deep-Sea Divers--This is Needed for the Ocean"]

[Text] At this point no one knew what had happened to the submarine. The radio report had simply not arrived from the submarine on schedule, and a gripping feeling of alarm overtook all those waiting for the message.

The order was barely received when the rescue vessel Vladimir Trefolev unmoored. Captain Lieutenant Yu. Parfenenko, the commander, did not know where he was going--the mission would be clarified en route.

It has always been a difficult matter to provide assistance to submarines. It is frequently necessary to work at great depths. A depth of 100 meters might appear insignificant. People have learned to cover 100 meters on land in a matter of 10 seconds. It takes almost 24 hours at sea, however. Even the record-holders in depths.

Practice descents had been conducted the day before on the Vladimir Trefolev. It might appear that they would already be forgotten. Not everyone had forgotten, however. First and foremost, the divers themselves. Some of them were still "coming to the surface." The pressure of fairly great depths was still being maintained in the decompression chambers, where the seamen were gradually eliminating the nitrogen from their blood. They were accumulating time-under-water. Even after leaving the decompression chamber the divers would remain under medical observation for at least 24 hours. The depths receive the men easily(the descent lasts only a few minutes), but are tremendously unwilling to return them, gripping them in the claws of caisson disease.

An orange float bobbed among the waves, however. This was the submariners' SOS. A steel cable and a telephone line were attached to the emergency buoy. The submariners were lucky to have released the buoy, lucky that there was no storm to tear it loose.

The sonar operators gave the precise location of the submarine. The rescue vessel set out mooring buoys, secured itself to them and "homed in" on the submarine. This was work which required a jeweler's precision, the results of which would determine

the success of the entire operation. Down there in the deep, after all, it would be difficult for the divers to maneuver, especially if they had to use an escape bell to evacuate the submariners.

No matter what happened, air would be the prime need of the submariners. Air to breath, air with which to inflate the tanks--air, a shortage of which is dramatically felt in the depths. Even now, the first request from underwater: "Ventilate the compartments"!

The depth of the submarine had been determined. It might appear very slight to a non-specialist. Today, however, it was not accessible even to all those who had already mastered this depth. Senior Lieutenant Vladimir Gorbunov, who had 1,500 hours of underwater work to his credit, had reached only 100 meters yesterday. The next depth was 120 meters, and he would reach today's working depth only on the third "try." The officer had just returned from training and, as the divers say, he had "lost his depth." He would now have to gradually reaccustom his body to the rapid elimination of nitrogen dissolved in the blood.

The first to go down for reconnaissance today would be Senior Seamen Vladimir Toptygin and Pavel Grabovetskiy. Their underwater history was still a short one: 300 hours each. This was only the beginning, however, because when a man has become a deep-sea diver, it is most frequently for life. It is a difficult and risky occupation, but this is precisely its attraction.

Once V. Toptygin found himself in a difficult situation and lost consciousness. P. Grabovetskiy rescued his comrade. In general, everything was relatively simple, but both of them crossed over a major psychological barrier: They had stronger faith than their comrade would help them, faith in their own capabilities and the ability to overcome fear.

Senior Lieutenant V. Gorbunov recalls how an underwater accident occurred several years ago before the eyes of Petty Officer 1st Class Sergey Kurapov, involving the latter's comrade. The seaman was deeply affected by the incident, became afraid of the depths, but he did not want to give up his occupation, no matter what. During the diving work, at Kurapov's request, he was also lowered on a small platform to a shallow depth. He simply watched, learned to feel comfortable and "recovered." He soon began performing his former work again.

The "vehicle" for deep-sea diving is a heavy platform with a diving bell and two outboard, metal chairs. How unusual it is to see people preparing to descend deep into the water, without the usual copper-colored helmet "with 3 windows," the lead-soled overboots and other copper-and-iron "shackles," without which it is not customary to visit Neptune. The light and fine, colored underwater suits with large mask-lights, overshoes or swim fins--these could not be called the armor of deep-sea knights. This is a modern work outfit.

Captain Lieutenant Georgiy Getmanets, the commander's assistant for rescue work, was in charge of the descents that day. His command post directly overlooked the diving deck.

A deep-sea descent somehow reminds one of the filming of a movie. Each of the many participants--from the leading actors to the ordinary lighting technicians--must

perform his job with great precision in order to produce a perfect frame. In film-making, however, we know that a faultless frame is rarely achieved without several retakes, but the deep-sea divers cannot count on any retakes.

This is why the descent operations officer must notice, take into account and foresee everything. Captain Lieutenant Georgiy Getmanets has 3,000 deep-sea hours to his credit, which is something of a record for length of time underwater. He has accumulated a great deal of his own experience and acquired a lot of experience from those who went before him and worked with him--a guarantee of dependability. This is perhaps why Senior Seamen Toptygin and Grabovetskiy felt such confidence before their descent and why their voices were so animated.

Their voices could already be heard among the noises and activities at the control post, and a magnetic tape recorder was recording the course of events. This would be the main record, together with the official report on the underwater descent.

The divers seated themselves in the sling-seats and were lowered to the water. A check was made to see that their diving outfits were air-tight and that the support systems were in good order. Then the platform with the bell went overboard. The last thing which could be seen from the deck was the divers "mooring" to the platform and climbing onto it.

A few minutes later they were at their working depth. It was reached in stages. At first the divers were given an air-and-helium mixture instead of air alone, which reduces the quantity of nitrogen inhaled by the deep-sea divers. The deeper the divers descended, the stronger the air cocktail was spiked with helium.

The deep-sea divers' first activities on the upper deck of the submarine were greeted with joyous taps from within the submarine. The submarine was at even keel on solid ground. These were ideal conditions, one might say. Even under these conditions, however, the first pair of divers were unable to finish the job. The second pair descended.

The deep-sea divers were raised to the surface very slowly. They first rode on the platform and then went inside the bell. The bottom hatch was battened down, the water was "squeezed out" and the pressure was raised to that on the outside--and the deep-sea divers removed their suits. It would have appeared that they were in their normal environment, the pressure invisible and unfelt. And it seemed incredible that should they go out onto the deck right then, they would immediately die. This is why those returning from deep water reenter the normal atmosphere through an extremely complicated process: from the bell into the receiving compartment of the decompression chamber and then through a system of compartments in the decompression chamber to the very last compartment, into which no one else would enter. And here the surfacing continues minute after minute, the process having been accelerated by the use of the bell.

And what about the submariners? They had been provided with everything they needed. There was actually no submarine experiencing an emergency, of course. These were exercises. The mission performed had involved a hypothetical situation. This did not make the descent any easier, however. Divers V. Toptygin and P. Grabovetskiy assume that they will most likely not have to take part in any real rescue operations. The

submariners' equipment is reliable enough. Even Captain Lieutenant Getmanets, who has given 10 years to the deep, has not had to do that for which he himself constantly trains and which he teaches his men--to actually rescue submarines.

Rescue workers are essential, however, if only to give a feeling of confidence to those who batten down the conning tower hatch and go down into the depths for long periods of time. They have a life of their own there, the same as the rescue workers. For both, however, it is subordinated first and foremost to the laws of courage. This is perhaps why the deep-sea diver's occupation is comparable to the work of cosmonauts. One Soviet cosmonaut, at least, is fully competent to make this statement. Colonel Engineer Valeriy Rozhestvenskiy served as commander of a group of deep-sea divers on a rescue vessel prior to becoming a cosmonaut in 1965.

He recently visited his old deck and left a note in the honored visitors' log: "To the Trefovlev sailors--the very best wishes from a former officer on the ship. It was very pleasant to meet again with something out of my youth...."

Sonar/Attack Training on Diesel Sub

Moscow KRASNAYA ZVEZDA in Russian 14 Jun 81 p 1

[Article by Capt 2nd Rank V. Polishchuk: "Breakthrough"]

[Text] The rumbling of the diesels fell silent, and the submarine glided along by inertia for a few more minutes. It then stopped and merged with the glassiness of the water.

The submarine commander, who was running through the forthcoming breakthrough of the ASW line of defense down to the petty details, summoned Lieutenant V. Vereshchagin, the navigator, to the bridge.

"Check all coordinates once more and pinpoint our location with maximum possible precision."

The navigator went below. The commander continued to study the situation. Should the "enemy" manage to detect the submarine even for a brief period of time, the main mission would not be accomplished. In this situation the enemy would not spare the depth charges or torpedos.

There was no reason to doubt that the plan worked out in advance by the submarine commander was the correct one. Any possibility of error had been precluded. A storm the evening before had greatly disturbed the water and affected the sea conditions, however. This circumstance is what was making the commander think about changing certain aspects of the tactical procedures. In the given situation he had to find precisely that plan which would rule out even the slightest error at the moment of breakthrough.

Senior Lieutenant V. Kozlovskiy, the second in command, came up to the bridge.

"It is not far to an area with suitable hydrological conditions, Comrade Commander."

"Order the sonar operators to take the necessary readings."

The plan for breaking through the danger zone had now been definitely established. The massive cover of the upper conning tower hatch cut off the flow of fresh air. A turn of the rack-and-pinion locking device--and anticipation of the battle overcame the commander.

"We shall break through undetected," the commander thought. "We have the experience. The crew performs all the missions consistently well and is capable of overcoming any difficulties."

The ballast tanks sucked in the water thirstily. The electric motors hummed smoothly. The commander was confident that the equipment was in good working order and he had no doubts about the skill of his men.

"Remarkable men," he said to himself. "I can count on any one of them. Take Petty Officer 2nd Class A. Kozin, for example, a first-class specialist. He adopts the know-how of the unit's best sonar operators.

"Warrant Officer A. Ivanishko is a party activist, a master of combat skill and senior seaman on the sonar crew.

"Warrant Officer V. Andrianov is the senior seaman on the excellent torpedo crew."

A few minutes later the submarine had reached the necessary depth. The bubble in the trim indicator stopped at the zero mark. Warrant Officer V. Kolesnik, senior seaman on the outstanding mechanics' crew, skilfully regulated the ballast flow. His hand movements were precise and controlled, like those of a conductor. This high level of skill in the trimming work is possessed by men with a great deal of experience.

The hours of underwater navigation went by slowly. The submariners performed as though in actual combat. The sonar operators detected the "enemy" at a distance approaching the maximum. The torpedomen prepared the weapon for practical use well, beating the norms. The navigator unerringly calculated the course necessary to take up their position. The seamen in the electrical engineering division commanded by Captain Engineer 3d Rank V. Zhgirov performed reliably.

Suddenly, however, fixes on operating sonar sets on surface ships were entered on the plotting board. This showed that the ASW forces were engaged in active search and were carefully monitoring the voices of the deep. The commander brought the submarine to a halt, all of the noise-producing machinery was switched off, and the submarine hovered in place to lull the ASW forces out of their vigilance. Selecting the right moment, the commander then altered courses.

Everything was going well. The AWS ships were approaching, however, gradually covering the channel selected in advance for the breakthrough. The submarine commander understood that the horseshoe formation of the ASW ships in this grid meant that a trap was being set. If he proceeded with his initial decision in this situation, the "enemy" would inevitably detect the submarine. He had to switch tactics. The submarine hovered again. The commander approached the chart and took a look at the plots, at the scattering of figures indicating the depth of the water, ordered a change in the submersion depth and the course and got the submarine underway. It moved cautiously to a new grid. In the meantime the ASW ships had set out in the opposite direction, to the deepest area.

After travelling a long time in concealment in the difficult tactical situation, the submarine took up the firing course and fired a torpedo salvo. The crew received the highest rating for the combat mission. And it destroyed the main target, travelling under guard, with the first torpedo. The umpires gave the commander and the entire crew, which were striving for the title of excellent crew, a good rating for their combat training.

Personnel Training by Senior Staff

Moscow KRASNAYA ZVEZDA in Russian 27 Jun 81 p 2

[Article by Capt 1st Rank N. Kapustin, unit political section chief: "A Friend's Shouldiar"]

[Text] The firing was to be a difficult one. In a single-combat situation the submariners were to test for the first time a new tactical procedure calculated by the staff officers to make the use of the torpedo weapon more effective.

Such assignments are ordinarily entrusted only to veteran crews with excellent training. And when the choice fell upon the submarine in which Senior Lieutenant Yu. Pankov commands the mine and torpedo division(BCh-3), some people had their doubts. Was this crew capable of handling such a burden? In the BCh-3, upon which the success of the firing depended in great part, many of the leading specialists had performed their jobs for less than a year.

"They can handle the assignment," the flag officer had said to erase their doubts. "The crew is young, but it is united and performs smoothly. And most importantly, the members are friends. The seamen will help each other, support the inexperienced and see to it that no one makes mistakes or is careless about his job."

The crew justified the flag officer's faith. The new tactical procedure was successfully tested, and the "enemy" submarine was destroyed with sniper accuracy. Slightly later the submariners also used the torpedo weapon effectively against a surface ship.

There are in fact many young sailors on this submarine. In the atmosphere of mutual assistance, however, they have all rapidly fitted into the formation and acquired skill. The experienced sailors accepted a socialist commitment to provide the new men with every sort of support. The matter of organizing mutual assistance was discussed at a party meeting, at which the communists were given specific assignments as to who was to help whom in his development. Fulfillment of the commitments and party assignments was carefully monitored. Among other things, certain CPSU members presented reports at a party bureau meeting.

The development of the BCh-3 specialists, among the new members of which was the sub-unit commander himself, Senior Lieutenant Yu. Pankov, was under the special observation of Captain 2nd Rank Yu. Nichik, ship commander and delegate to the 26th CPSU Congress, and Captain Lieutenant Yu. Tarariyev, his deputy for political affairs.

The division had previously been headed by Captain Lieutenant V. Andreyev. He had an excellent understanding of the weapons and the men. And the veteran officer volunteered to provide the young subunit commander with regular assistance. As a beginning he showed the young commander how to properly fill out the forms and the

correct methods for conducting the classes. Sometimes, when the situation permitted, he himself would help to organize the drills, monitor the work performed with the equipment and give advice on loading the weapon. Andreyev was not overly protective of Pankov, however, and did not perform the latter's job for him, but attempted to develop initiative and independence in the young officer.

Warrant Officer Yu. Abramov, senior seaman on the torpedo crew and recent graduate of a school for technicians, who had never before served on a submarine, also received every kind of support from his comrades. During his very first days on the submarine he entered into competition with the slogan "Second Class the First Year, First Class the Second." With the help of the veteran warrant officers he purposefully studied the equipment, the weapons and the arrangement of the submarine. When he had gained confidence, he himself helped a young seaman to master the specialty of the torpedoman. Incidentally, they were both certified ahead of schedule for independent control of their departments.

Along with studying the equipment, both Senior Lieutenant Pankov and Warrant Officer Abramov--again, with the help of their more experienced comrades--learned the methods for performing indoctrinational work and mastered the principles of military pedagogics and psychology. On the whole, and not accidentally, when the question of selecting a crew arose for working out the new tactical procedure, all of the young torpedomen had an excellent knowledge of the weapon, were approaching the more experienced seamen in skill and were afire with a desire to test themselves on the difficult job.

Such is the strength of naval comradeship, which brings the men together and solidly unites them into a single combat family. The word "comrade" is a proud word or, as Maxim Gorkiy said, a great and vitalizing word. It especially expresses the class affinity of the Soviet people, including the fightingmen, and the oneness of their duty to the homeland.

Mutual aid and inviolable loyalty to the laws of military comradeship are an integral feature of the Soviet fightingmen's moral make-up. This is at the same time one of the glorious combat traditions and one of the regulation requirements. And our commanders and political workers devote the closest of attention to the process of indoctrinating the seamen in a spirit of combat friendship and collectivism. All of the work is based upon 26th CPSU Congress decisions.

I feel that true comradeship in our navy begins with the seamen's love for their ship, particularly their pride in the difficult service on a submarine. We instill this feeling in the newcomers, beginning with their very first days of service. When new men join the crew, the personnel line up in formation to greet them. The newcomers stand before the file of their senior comrades. This is the ceremony. Music is played, and the fighting colors are displayed. The commander and the political worker, unit veterans and masters of military affairs make welcoming speeches. The young fightingmen then go to the combat glory room, where they are acquainted with the deeds of the frontline submariners by war veterans Warrant Officer Tarariyev (the father of Captain Lieutenant Yu. Tarariyev), Warrant Officer Reznik or visiting former ship commanders. When they tell about the heroic acts of the submariners, they always describe incidents in which interchangeability at the combat stations and friendly support helped the seamen to gain victory in the most critical situations.

The formal transfer of battle stations is performed on the ships, and the newcomers are initiated as submariners on their first trip to sea. The submarine's submersion depth is announced, the commander congratulates the newcomers on the important event in their life and invites them to the control room. A special certificate is issued to each of them there. Incidentally, all of these ceremonies are mandatory both for the seamen and petty officers and for the young officers and warrant officers.

Such activities might be considered something common. We have become convinced, however, that when well organized they are of perceptible benefit with respect to uniting the crew and maintaining a wholesome moral microclimate on the ship. It is only where the commander, the political worker and all of the officers, warrant officers and petty officers work with the men purposefully and on a daily basis, however, that the crew is solidly united by naval friendship, that there is no place for so-called non-regulation interrelationships.

It is particularly important promptly to spot and put an end to any attempt to deviate from regulations, no matter how insignificant it might appear to someone. We know, after all, that frictions among the men begin precisely with various kinds of so-called "trifles," if these are overlooked. And a great deal depends upon the stance taken by the warrant officers and petty officers.

One of the "seasoned" sailors once attempted to have a young seaman perform his job for him. This was noticed by Petty Officer 1st Class M. Podgornyy, senior seaman on the crew and a principled and demanding junior commander. He put an immediate halt to the attempt at "subjection." The officer supported him. Upon learning about the incident, the ship commander and political worker performed appropriate work in the other subunits as well.

Our staff and political section devote constant attention to the development of the junior commanders. Methods assemblies, conferences, exchanges of know-how, and so forth are conducted. They still develop as real indoctrinators right on the ship, however, in their division. It is therefore important for the subunit commanders to receive proper recommendations based upon many years of experience and the requirements of military pedagogics and psychology. These recommendations help the officers to determine what is most important in the work performed with the men.

Captain Lieutenant V. Kulakov, commander of an excellent division, as an example, indoctrinates the petty officers and seamen with a lot of thought and purpose. In personal talks with the men--and he arranges these very meticulously--the officer tries to learn as much as possible about the sailors: about their relatives, where they worked or studied and how well they did in school or on the job. Was the sailor a shock-worker prior to being inducted into the navy, as an example, or did he have a police record? Correspondence with the parents and the labor collectives helps the officer gain a better understanding of a sailor.

Experience has taught us that the indoctrination of the indoctrinators itself cannot be left to progress on its own. Staff workers and the political section apply a great deal of effort in this area and always stress the enormous importance of the officer's personal example, of his moral qualities.

Officer A. Reznichenko never set an outstanding personal example, neither in his service performance nor in his conduct. This could not but affect the performance of

the service duties by some of his men. Officers B. Boyko, A. Shamonin and I. Kaplun began to violate discipline and exhibit negligence on the job. They did almost nothing to develop interchangeability or to strengthen the crew's solidarity. As a result, the ship only performed its regular training mission on the third attempt, instructions were violated in the subunits and the sailors did not completely fulfill their commitments in the competition. It should be noted that competition was poorly applied for indoctrinal purposes on the ship. Rude treatment of a colleague by Petty Officer 2nd Class A. Gasanov was not assessed from a standpoint of principle. On the contrary, an attempt was even made to cover up the incident, to gloss it over. And it was not until the superior commanders intervened that specific steps were taken to unite the military collective.

In our work of strengthening naval friendship and developing smoothly coordinated and united crews, we also try to take into account the fact that representatives of many different nationalities serve on each ship. On the last cruise, for example, Captain Lieutenant Yu. Tarariyev set up a special evening session on the subject "In a Single Family," at which sailors born in various republics spoke.

...The wind rustles the leaves, and a march melody flows over the pier. The crew of a submarine which has just returned from an autonomous cruise stands frozen in formation. The submarine's veterans and those who have taken their first cruise at sea stand shoulder to shoulder. I look at them and I see written in the eyes of each: "We are ready to perform an even more difficult assignment, because we shall perform at sea again just as the oath and military duty require. We shall always act in accordance with the laws of naval fraternity, according to the principle: 'One for All and All for One'."

Torpedo Training

Moscow KRAYNAYA ZVEZDA in Russian 9 Jul 81 p 2

[Article by Capt 2nd Rank A. Slobozhanyuk: "Distance Triangle"]

[Text] This line from a telegram sent to the fleet and signed by the commander, "Submarine(followed by the number) had ideal range conditions but was unable to begin the attack." is imprinted in the mind of Captain 3rd Rank V. Smolyakov probably for life.

The guilt seemed to be shared by the entire crew, but Smolyakov, the submarine commander, felt the main burden. He was not criticized very much at the time, to be sure. He had not been a commander long, after all--only 5 months--and it is not an easy matter to attack a detachment of combat ships.

This is all true. But they not only failed to undertake the attack: They did not even hear the "enemy" ships, or, as the wits say, they did not even get into the distance triangle. And mathematics describe the tactics in this triangle, for it accomplishes the task of having the torpedo encounter the target.

The commander had a heavy heart.

"What are we going to do, Victor Ivanovich?" he asked Captain Lieutenant Myakotin, his deputy for political affairs.

"Correct the error," the latter answered. "The crew can handle the task. We only have to prove it."

"Prove it by doing it," the commander added.

In the 5 months they had served together they had already learned to understand each other. Vyacheslav Smolyakov had grown up in the family of a frontline political worker and he saw in his deputy those qualities of character for which he highly respected his father. Those qualities were, first and foremost, selflessness in the work, a desire to find good things in every person and the ability to put the men in a fighting mood. It was in great part Captain Lieutenant Myakotin's initiative and earnestness which had revitalized the party organization's work and raised the prestige of the communists on the crew.

And so, their preparedness to perform difficult missions could only be demonstrated with action, and the action had to be learned, taking advantage of every opportunity to do so. For a period of time the submarine was moored at another base, and that base had one of the best torpedo firing classrooms in the fleet. Warrant Officer A. Ivanov, in charge of the classroom, is well known. He is a master among masters and has given a quarter of a century to working with torpedos.

During the first training session with the submarine's battle crew, Warrant Officer Ivanov observed with some amazement: Lieutenant of Medical Service B. Vashkevich, Chief Petty Officer M. Garmash and Captain Lieutenant V. Myakotin were working in place of the regular specialists. And although interchangeability among the submariners based on their specific service duties is worked out on all the crews, Warrant Officer Ivanov had never before seen this kind of substitution.

In addition to this, Smolyakov asked the classroom chief to create a complicated tactical background with the instruments. And this is the way it went, day after day. In the climate of active rivalry the submariners cut seconds off the rigid norms, and the combat coordination of the crew grew stronger.

Warrant Officer Ivanov told the commander in parting:

"You have worked hard. Either you will have great victories or I know nothing about torpedo training."

On their cruises at sea the crew solidly reinforced the knowledge and skills acquired on the simulators. And the victories came.

No one reminded Smolyakov of his first failure, but the ironic and severe words from the commander's telegram about "ideal range conditions" did not fade away and were not forgotten. They seemed to overshadow each success for him. His father had taught him: "Praise motivates a man, but if he hears it too frequently praise can destroy his will." He was now receiving frequent praise. And not only for the torpedo training. He had recently received the commander's order on the training results. Among other things, the order had pointed out Captain 3rd Rank V. Smolyakov's imaginative and non-routine actions.

They were to find an "enemy" nuclear-powered submarine and pass on the necessary information to ASW ships and pilots. The difference in the combat and maneuvering capabilities of nuclear-powered and diesel submarines is well known, especially when they are submerged. Smolyakov's chances were extremely slight. They existed, however! He dared to engage in a bold but carefully calculated move, and the "enemy" took the bait. They maintained reliable contact with the target long enough to have attacked and destroyed it more than once.

Due credit was given the crew for the victory. "You performed in the frontline manner," the flag officer said during the critique. The ship's commander and political worker were presented with engraved watches.

The crew became the record-holder in the unit for number of torpedo attacks receiving the highest rating. But no firing is like the previous one, although the torpedo is considered to be the traditional weapon of the submariners, the use of which has been firmly mastered over the decades. The specific combat training situation has the most to do with the fact that the plot or the pattern of an attack is never repeated. What kind of target do you intend to attack? What kind of weapon does the "enemy" possess, and what kind of power and detection equipment does its ships have? Furthermore, it is not an easy matter to forecast the water conditions at sea. Most importantly, however, tactics are undergoing constant development for both the submariners and the ASW forces. At any rate, a record-holder has no place to hide in case of failure. And the commander would also have to render account to his father. Colonel Dmitriy Petrovich Smolyakov took great interest in his son's service career. He once read a small item in KRASNAYA ZVEZDA, which mentioned his son. He immediately wrote his son a letter, in which he reminded him that old fame is nurtured by new fame, that it is the duty of the officer-and-communist to move ahead, to keep achieving more.

The submarine was maneuvering in the area through which a detachment of "enemy" combat ships was to pass. The flag officer issued a tactical memo, in which he warned:

"It is usually considered that the main target makes more noise than the others. This time it will be difficult to distinguish them, because the ships have almost identical power plants and their propellers sound alike."

The flag officer recommended that the commanders use all detection means: sonar, radar and the periscope. Smolyakov decided to conduct the search and the attack using only the sonar, however. This would make it easier to conceal their actions.

The commander was counting upon Warrant Officer N. Matveyev, a master of military affairs with a special talent for isolating in the cacophony of the sea the barely perceptible propeller noise of an "enemy" ship and for accurately determining the ship's class.

"The main target is target number 3," Warrant Officer Matveyev said with assurance.

The combat work was at its peak in the control room. The attack data were being determined. In the final analysis everything went back to the classic distance triangle, at the vertices of which would be the submarine, the target and the point at which the torpedo would encounter the target. What a lot of work had to be done, though, to make certain that this triangle was the very one which would mean victory in the battle!

Lieutenant Yu. Abramov, the navigator, was hard at work. He had graduated from school just the year before but had already distinguished himself more than once on cruises. Chief Petty Officer M. Garmash was carefully recording the situation on the plotting board. Warrant Officer P. Lozhnikov, master of military affairs, was manning the controls with great finesse. The second-in-command was reporting the averaged data.

A lot of information was entering into the commander's brain. A year ago Smolyakov would have been noticeably nervous in this situation. He was calm now. At any rate, he appeared to be calm. He confidently directed the ship and kept extremely complicated calculations. The training battle was entering the crucial phase.

Smolyakov once joked to the political worker:

"A difficult attack takes a year off my life."

Captain Lieutenant Myakotin smiled and replied:

"Each attack gives a year of maturation."

The submarine shuddered as the torpedos left it, and the agonizing seconds of suspense dragged on. The tension fell somewhat when the sonarman reported that the noise of the torpedo screws was drowning out the sound of the main target. Now the commander was holding a telegram: "The main target was attacked. A preliminary rating of 'excellent'."

It was night when the submarine returned to its base. The submariners marched to their barracks on shore with the feeling of people who had performed well. Heirs to the combat glory of their fathers and grandfathers, they were demonstrating with action the fact that the baton passed through the generations of the homeland's defenders, which was mentioned by Comrade L.I. Brezhnev at the 26th CPSU Congress, is in reliable hands.

The distant stars shone down peacefully and calmly from the night sky. After the unsteadiness of the deck it was a pleasure for the submariners to stand on solid ground.

The integrity of their native land was intact.

Submarine Commander's Day Described

Moscow KRASNAYA ZVEZDA in Russian 25 Jul 81 p 2

[Article by Capt Lt A. Tkachev: "The Loud Battle Bells--A Day in the Life of a Submarine Commander"]

[Text] The invisible horizon line had to be guessed at, somewhere beneath the very lowest star. A meteor passed phosphorescently in a slant across the sky. There a star came up. It was followed by another.

The watch officer and the signalman disappeared like shadows down the hatch. Only the commander was left on the bridge. He had only to secure the conning tower hatch, and the submarine would descend into the depths. A red-white-and-green constellation

appeared on the horizon. This could be nothing other than the lights above an approaching ship. Why was the commander delaying?!

"Stay by the periscope!" Captain 2nd Rank Prokopenko ordered.

"Why was there no report that a 'strange' radar was operating?" Prokopenko asked abruptly.

"There was not a single radar on active mode within scanning range," the operator answered in an offended tone of voice. "Komsomol honor"!

"Navigator! You were able to determine our position from the stars this time, I hope"?

"Yes sir."

"Torpedo attack"!

The loud battle bells shook the compartments. Prokopenko had served only slightly less than 20 years in the underwater service. A great deal of this had become familiar and even slightly boring, but not these bells signalling an attack. Naturally, Prokopenko was not always overly well-satisfied. He was proud of a dozen attacks and valued 10 more, but the others he considered to be routine. He went into each new attack as though it were his very first, however.

Prokopenko did not hesitate to use four training torpedos in a salvo at a target. When this happened, of course, the commander determined just which ship they would "torpedo."

"I am assuming," he said with reservation born of a habit of precisionness.

The reservation was missed, but the target he named produced a minute of amazed quiet in the control room. Everyone there knew that the ship he mentioned represented the main striking force of the "Blues" in the exercise. It is a pleasure after attacking such a target to compose a radiogram for headquarters.

Prokopenko did not excel in the kind of luck which greases so well the wheel of fortune. He had served as second-in-command for 6 years. He had known success as a commander, but had been unable to remain at its crest. In one long-ago exercise Prokopenko was to attack a cruiser carrying an inspector from Moscow. As he took the submarine to the salvo point Prokopenko least expected that the admiral, running ahead of events, had referred to him as a sniper/commander. In a way the admiral had thereby vouched for the flawlessness of the attack to the inspector. Flawlessness was not forthcoming, however, although the torpedos did pass under the cruiser. Not all of them could be retrieved immediately, though.

In the next firing exercises Prokopenko did not sink any torpedos, but he was criticized for attacking from such short range.

He wanted to distinguish himself, to show what the submarine's combat crew could do. The next attack was successful: The torpedo surfaced directly beneath the target, but training torpedos, let us point out, do not surface before they have expended all their momentum. There could be no complaints about the firing range, but the target had to be sent to the dock--to patch up the bottom.

The unscheduled dry-docking of the target was reported to the admiral. And when higher headquarters demanded the firing reports, the commander prepared himself for more unpleasantness. He received a telephone call, however, telling him that the fleet commander had noted the skill of the attack and awarded Prokopenko, communist and officer, an engraved watch. Unfortunately, though, a corrected rating for the firing, which had been lowered "just in case," was not backdated in the unit.

It was approximately just such incidents which gave birth to Prokopenko's reputation as being unlucky. He himself paid no attention to such rumors. And if we discount occasional hesitations, command valued his know-how. There was no other way to explain the fact that he would be summoned to headquarters today and tomorrow morning present himself to a new crew and leave on a months-long ocean cruise.

The day arrived when headquarters decided to test the submarine's preparedness for an exercise at sea. Prokopenko brought the ship to the anchorage site, but heavy waves made it impossible to moor the submarine to the tender. Consequently, the inspection group headed by the flag officer could not board the submarine. A day passed. Prokopenko received an order to replenish the fuel supply from a tanker. There was no need for this, since they had recently taken on fuel. The risk of damaging the light hull upon approaching the tanker was evident, however, and there was also a risk for the sailors who would have to be sent out onto the slippery deck.

Prokopenko contacted the flag officer. The latter would not budge:

"I have to fill you up to the plugs before the exercise begins."

"Very well," Prokopenko answered, retaining a calm tone of voice. "In that case, I request that you confirm your oral instructions by telegram."

The intercommunication system was switched off. An hour later a message was received: "Commander! Make your own decision about refueling. If you run out of fuel during the exercise, however, we shall have a different kind of talk."

Prokopenko departed for the position. He received the exercise instructions by radio. When he signed the night report following the attack, the commander expected new instructions from headquarters, possibly a change in the submarine's destination. He was prepared for any turn of events, but not for what the morning radiogram brought.

Prokopenko ran over it with his eyes and gestured for the second-in-command to approach. Captain Lieutenant Aleksandr Krivitskiy read the radiogram and exclaimed: "This is impossible!"

A real mess had developed. The situation report showed the location of the ship attacked the night before as that indicated in the report made 24 hours earlier. Basic calculation of the time which had elapsed since the time of the attack, even with the ship travelling at top speed, showed that it could not possibly have returned to that same area. Consequently, it had not left the area!?

"It appears," Prokopenko said with chagrin as he shook the sheets of the telegram, "that headquarters believes we attacked no one knows whom last night. A vessel which wandered into the exercise area."

"Could we have erred in our classification of the target?" the second-in-command suggested cautiously. "After the exercise the flag officer will remind us of our night report...."

"That is not the problem."

"Perhaps the signalmen were confused"?

"Find out."

Krivitskiy left, and Prokopenko calmly recreated in his mind the moment at which someone's navigational lights had appeared on the night horizon. The area had been declared dangerous for navigation and was outside any active sea channel. Through his binoculars Prokopenko had seen that the distinguishing lights were a long way apart, which meant that the deck was a wide one, and high above the water. A thought struck him at that point: Was it really a vessel?

His guess seemed absurd at first. A surface ship of the "Blues" would not be travelling during "combat exercises" with lights showing! Something did not make sense. The lights advanced in the periscope lens until a vague shadow formed a silhouette which Prokopenko would have recognized out of a thousand others. A combat ship!

After recalling all these details from the night battle, Prokopenko breathed a sigh of relief: Everything would be cleared up now. They only needed to take a look at the film.

"Send Lipkin to me"!

Senior Lieutenant Lipkin, the ship's political worker, had snapped several shots before the beginning of the torpedo attack. The film which was produced showed no traces of a ship's outline, however.

"What does this mean, Aleksandr Aleksandrovich"?

The second-in-command approached:

"I have the staff's 'receipt' for our report. The control tape is in good shape--no blanks and no distortions."

"Good," Prokopenko said with a nod. "We submitted an honest report on our actions. That is all we are responsible for. Lipkin! Have you made out anything from the film? I do not believe in the 'Flying Dutchman', and all the other ships and vessels should have left an image if they were properly photographed"!

Lipkin crushed his cap in his huge palm.

"My mistake, Vladimir Nikolayevich. In my haste I confused the cameras. I took the one for daytime filming."

"All right, since there is no direct evidence, let us look for indirect proof," the commander said, now in a calm tone of voice.

The chart had not been removed from the navigator's desk, and Senior Lieutenant A. Grigor'yev's pencil marks had not even been erased.

"Everything is in order here," Prokopenko said. "The target was proceeding along the edge of the area, to be sure, but we recognized it and attacked."

The magnetic tape of the noises from the target attacked was then played.

"Do you hear that? A turbine, and not just one either. Travelling at only 18 knots. That is not an efficient speed for a commercial vessel."

"And the power of the engines is typical of a combat ship," Krivitskiy noted, squinting from the piercing sensation made in his ears by the turbine sounds.

"We have a body of characteristics not typical of a civilian vessel," Prokopenko summed it up.

"Except for the lights," Krivitskiy reminded him.

"Yes. Something else bothers me far more, though. Does the very idea of a raid by such a ship alone and without a powerful escort seem risky to you? It is a tempting thought, however! Take the ship to the striking line--and the "Blues" would accomplish the main mission of the exercise. They would only need to throw off the "enemy's," that is, our reconnaissance for at least 12 hours. And it seems that the "Blues" managed to do just that. Judging from everything, headquarters did not believe our report."

Prokopenko chewed the stem of his empty pipe in meditation for a long time.

Past midnight they tied up to the tender.

Prokopenko found the operational duty officer in the control room. The latter stared at him with curiosity:

"Then it was your report on the attack?"

"It was my report."

"You stirred up a mess. I hope that you are happy--the exercise was called off."

"For what reason?"

"What would be the point of continuing?" the duty officer said with a shrug of his shoulders. "The 'Blues' exposed their queen, so to speak, to attack at low speed and lost it. The flag officer is going to have someone's head in the critique."

"Whose?"

"The reconnaissance man, for not noticing the main target breaking away from the group.... Incidentally, because of him your report was not taken seriously at first. The main reprimand will go to the commander of the "Blues," however. His decision on the raid was incompetent."

Upon returning to the submarine Prokopenko found his second-in-command on the bridge.

"Krivitskiy, when I was second-in-command I dreamed of becoming a commander so that I could finally get enough sleep. You choose not to take advantage of the opportunity, however."

"I was instructing the watch, Comrade Commander."

"That was 2 hours ago. You must be waiting for news from headquarters? I can put your mind at ease. We classified the target correctly. Something else is not good, though. The commander of the 'Blues' is going to get it from the flag officer in the critique."

Krivitskiy shrugged his shoulders and said:

"That is up to the flag officer. The 'Blues' are our enemy."

"That is your youth speaking. I say that the raid plan was a good one. Had we not been on the ship's path, the exercise would have had to be halted anyway--because of the obvious success of the 'Blues'. They were unlucky, but this does not mean that they should be hauled over the coals for it. Otherwise, they may get the idea that no one is scolded for acting in the routine manner. So, that is just what we shall do! You know, Krivitskiy, what this kind of thinking will lead to? When you become a commander, you will be bored to tears as you leave for an attack."

"You cannot interfere with the flag officer," Krivitskiy remarked.

"Why interfere? We need to help. He is not a submariner, and the events of last night were all defined in the subtleties and nuances of a submariner's psychology. Let us go, Krivitskiy! We still have time before morning to come up with a report for the critique. Let us try to influence the assessment of events."

Medical Services on Submarine

Moscow KRASNAYA ZVEZDA in Russian 10 Jul 81 p 2

[Article by Capt 3rd Rank S. Bystrov: "Faith"]

[Text] The submarine had been at sea a long time. Its mission demanded that it operate in complete secrecy. Detection of the submarine by the "enemy" would essentially mean its destruction. The commander had had to make decisions involving a risk more than once. And it appeared that nothing could discourage the commander or catch him unawares--he had experienced just every possible sort of trouble in his service career. This time, however, he felt that the situation might be more than he could handle. And the situation had not been created by the "enemy's" cunning, but had been "set up" by life itself.

Captain of Medical Service V. Zvantsev, ship medical service chief, went up to the command center. Captain 1st Rank A. Nechepurenko sensed that something was wrong, but he still tried to make jokes:

"Doctor, aren't you sick?"

"Not at all, Comrade Commander," Zvantsev answered with seriousness, ignoring the joke.

"I came to tell you that the operation cannot be put off."

The commander knew that Captain 3rd Rank Engineer Aleksandr Avdonin had had a relapse of an illness which had recently hospitalized him. He still hoped that it would pass, though.

"We cannot avoid the operation, then"?

Nechepurenko knew his medical service chief too well to have to ask the question. He still asked, however. There are situations in which one has to reassess repeatedly all the guidelines used in an ordinary situation. Did Zvantsev understand this?

"I request permission to perform the operation. I shall attempt to see that the wound heals rapidly."

The captain 1st rank knew that in such operations the wound is not closed up completely at once, since the inflammation can set in again. This means that it takes longer for the wound to heal. A month to 6 weeks even when the patient is immobilized. And during this time--even if there were no additional complications--the crew would be forced to get along without a very needed specialist, one of the watch engineer/mechanics.

"How much time do you need before you can return Avdonin to action"?

"Twenty days or so, Comrade Commander," the medical service chief answered calmly, as he always did.

And the captain 1st rank easily detected in his voice that which always makes it easier to make a decision--a subordinate's confidence in himself. Naturally, no one can ever absolutely guarantee the outcome of what is planned. The commander did not expect this. The doctor's confidence, however, helped him to overcome that doubt barrier, and without this it is doubtful that a battle would ever be won.

The doctor and the commander now had a very real battle on their hands--to see that the ship performed its mission. And success, strange as it might sound, at that moment would depend upon the most "non-naval" officer on the submarine--a doctor.

Who among the seagoing doctors, especially the submariners, has not known failures, rare but still occurring? Situations in which exercises were called off or long cruises were halted because a man could die--and this could not be permitted? The submarines would surface immediately, in the presence of a storm, and move at full speed toward surface ships for help, ignoring danger. Helicopters would take off from the decks. Dozens, hundreds of men suffered, fretted and took desparate risks, because their one, inadequately competent doctor had done something wrong, could not do anything or had made the wrong decision. The faith which the commander, the crew and the fleet had in him proved to be unjustified.

Faith is not simply an expression of the people's attitude toward a specialist. It is a sort of milieu, a microclimate, without which it is impossible for an individual who heals people to perform successfully. No one but the doctor himself can create this climate of faith, however. Not on a ship, at least. Who on a ship can give advice, who can caution the doctor? There are no such specialists on the crew. And if one had asked right then what communist Vadim Zvantsev, newly graduated from the Military Medical Department at the Gor'kiy Medical Institute, considered his first duty to be when he arrived on board the submarine, he would have answered without hesitation: "To gain the confidence of the men."

When Vadim Zvantsev walks around the small city in which he presently lives, he invariably ends up on Solovey Street. This street bears the name of a ship's doctor. This happened many years ago. Captain of Medical Service Arseniy Solovey performed an appendectomy on Petty Officer 1st Class Yu. Il'chenko, a career serviceman. The unforeseen occurred, however, and the doctor sacrificed his life to save the patient. The military doctor was posthumously awarded the Order of the Red Star. The petty officer he saved lives on the street named after the man who demonstrated such great courage that he increased the prestige of the ship's doctor with his act, leaving his colleagues the heritage of the submariners' faith.

Every doctor arriving on board a submarine, however, has to reaffirm this faith on his own.

The young Doctor Zvantsev had also gained the confidence of the sailors. One of his first tests was an incident in which Captain Lieutenant N. Popov broke an arm. He was delivered to the infirmary on shore. Lieutenant of Medical Service A. Kulakov, the duty doctor, summoned Zvantsev from the ship. The fracture had proved to be a compound one, and the nearest hospital was too far away and could not be reached because of bad weather.

The two lieutenants, both ship's doctors, had a consultation. Zvantsev was definitely in favor of helping the patient on their own.

"Yes, of course," Kulakov agreed, "but there is a risk involved: What if the fracture bends crookedly? We are dealing with the ship's second-in-command, and you are scheduled for a cruise soon."

Captain Lieutenant Popov smiled through the pain, when the lieutenants entered the office.

"Have you decided, Aeschyluses?"

"We have," Zvantsev answered.

"That is good. Let us take the risk together for the common cause."

The bones were reset, and an X-ray photograph showed that they were properly in place. A cast was placed on the arm. Sometime later Popov was travelling through Leningrad. He went to the Military Medical Academy imeni S.M. Kirov for an opinion: a fracture is no joking matter, after all, especially when one's entire career lies ahead of him. A professor inspected the arm and made the brief statement:

"I do not know what sort of specialist performed the work, but we could not have done it any better."

Vadim Zvantsev could immediately sense a change in the crew's attitude toward him. The sailors no longer had even the slightest doubt as to his professional competence.

The young doctor took eager advantage of every visit to shore to increase and expand his knowledge and to acquire practical skill. Take, as an example, just the teeth, which he also had to be able to treat and not just to pull when the need arose. He acquired skill, and as a result, even when they were at the base the sailors preferred to go to their doctor for stomatological treatment.

"Vadim Vyacheslavovich, my child is ill, and the wife wants you to take a look...."

Zvantsev became accustomed to such requests from the ship's officers and warrant officers. In the beginning he would ask: "Why didn't you call a pediatrician"? And the answer was always the same: "Well, you are our own doctor...." This meant more than any praise. The submariners knew that Zvantsev had begun his training at the institute in the pediatrics department. Most importantly, however, he had been on five long cruises with them, and they had grown accustomed to trusting him in all things....

The incident involving Captain 3rd Rank Engineer Avdonin occurred on one of the five cruises.

"Perform the operation," Captain 1st Rank Nechepurenko finally said. "Are our present sailing conditions satisfactory or do you need special conditions"?

"Thank you, Comrade Commander, everything is fine."

Captain 3rd Rank Engineer Avdonin went back on watch 20 days later, just as the doctor had promised. The wound healed rapidly.

More than 2 years have gone by since then. Communist Vadim Zvantsev was recently given an early promotion to the rank of major of medical service. This year his candidacy was approved for the Command School at the Military Medical Academy imeni S.M. Kirov. Why had he selected the commander's department? After all, it had always been predicted that he would be a doctor and not a commander. Yes, Zvantsev is a capable doctor, who loves his profession, but he has one other quality very important to the medical specialists in epaulets: the ability to make a decision with all the competency of a doctor and with all the responsibility and boldness of an officer.

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PERCEPTIONS, VIEWS, COMMENTS

OVERVIEW OF POLITICAL, MILITARY, STRATEGIC POSITION OF PAKISTAN

Moscow ZARUBEZHNOYE VOYENNOYE OBOZRENIYE in Russian No 3, Mar 81 (signed to press 5 Mar 81) pp 24-27

[Article by Maj V. Andreyev: "Pakistan - Its Geographic Position, Economy, Infrastructure, and Armed Forces"]

[Text] Pakistan, one of the largest capitalist countries in southern Asia, was formed on 14 August 1947 by the division of the former British Dominion of India into two states, India and Pakistan. Until December 1971 it consisted of an eastern part and a western part, but then the People's Republic of Bangledash was formed on the territory of the former East Pakistan. Pakistan today within its current boundaries has a territory of 803,900 square kilometers. Its capital is Islamabad.

In recent times this country has become a source of tension affecting the security of adjacent states. For more than two years now, under pressure from ruling circles in the United States and China, it has served as a base of operations for the undeclared war being conducted by international reactionary forces against the People's Republic of Afghanistan. At the present time, the foreign press reports, there are more than 30 military camps and 50 bandit strongholds in Pakistani territory. Since November 1979 more than 30,000 interventionists have been trained in them. These centers are capable of training 5,000 hired murderers at once.

The militarization of Pakistan is in full swing. As the Indian newspaper PATRIOT testifies, the country "has long since become a constituent part of the strategic American-Chinese alliance, which is directed against Afghanistan, the Soviet Union, and India." Pakistan is devoting particular attention to developing its own nuclear weapons.

Government System. Pakistan is a federated republic. The head of state is the president. Power is held by a military council which includes the commanders of the three branches of the armed forces. The principal military administrator is at the same time the country's president and head of the executive branch.

Political Parties. The Pakistani People's Party was founded in 1967. It draws its support from the middle and petty bourgeoisie and favors strengthening national independence and "Islamic socialism." This party was in power in 1972-1977. The Pakistani National Alliance was organized in 1977 as an alliance of nine parties opposed to the government of V. A. Bhutto. After defeat in elections the PNA initiated a "campaign of civil disobedience," which in fact led to a political crisis in which the army seized power.

The National Democratic Party was founded in late 1975 and favors democratic transformations in the country. The People's Movement of Pakistan was founded in December 1978. Eight progressive parties and groups joined it.

The socialist Party has existed since 1971. It favors the development of relations with the socialist countries. The party operates underground.

The Communist Party of Pakistan was founded in 1948, and has operated underground since 1954.

Population. In mid-1980 Pakistan had a population of 82.7 million. The average population density is more than 100 per square kilometer, but the figure is much higher in the valley of the Indus River and its tributaries where the bulk of the inhabitants live. About 75 percent of the population live in rural areas. Of the total population, 60 percent are Punjabi and linguistically related peoples, while the rest are Pashtun, Sindhi, Baluchi, and other peoples. The official languages are Urdu and English. The state religion is Islam (97 percent of the population); there are also Hindus, Christians, and Buddhists.

Geographic Possession and Natural Conditions. Pakistan is located in the southwestern part of the Hindostani Peninsula (Indian subcontinent) in the Indus River basin. The southern part of the country is on the Arabian Sea. Pakistan has borders with India, Afghanistan, and Iran. By continuing illegally to hold the northern part of the Indian state of Jammu and Kashmir, Pakistan also has a border shared with China.

The topography of the country is in large part mountainous. Especially high mountains occur in the north; the peaks exceed 7,000 meters in spurs of the Himalaya and Hindu Kush. The western part of the country is on the Iranian Plateau. This makes economic development of the territory and maintaining internal and foreign contacts more difficult. The mountain passes and passages are very important. The most important is the Khyber Pass which connects Pakistan and Afghanistan. The Indus plain stretches from the Arabian Sea for a distance of 1,200 kilometers to the base of the Himalayas and is up to 550 kilometers wide. Southeast of the Indus plain is the Thar Desert. A large area of swampy country is located in the south, along the border with India.

The Indus River (3,195 kilometers long) and its tributaries form powerful waterways for most of the year. The Indus is navigable to small ships for about 1,200 kilometers.

The climate is chiefly tropical, but in the extreme southwest it is subtropical and very arid. Up to 1,000 millimeters of precipitation a year falls in Punjab,

but not more than 200 millimeters in Sind (lower reaches of the Indus). Because of the monsoon 70 percent of annual precipitation on the Indus plain falls in the summer months. The summer temperature during the day rises to 40 degrees C.

The natural vegetation of Pakistan is sparse. It has survived chiefly in the mountains, while the Indus plain has for the most part been plowed up and planted with crops. Small plots in the mountains and river valleys are forested, occupying less than three percent of the country. Deserts and semi-deserts are widespread.

Economy. The Pakistani economy today is in a difficult situation and depends on foreign capital. Many economic installations in the country were built with loans and subsidies from the United States, Japan, Great Britain, and West Germany. Large payments on foreign loans and the export of profits by foreign monopolies have a negative effect on the country's financial situation.

The state budget for the 1979-1980 fiscal year envisioned total income of 41,037,000,000 Pakistani rupees (4,208,000,000 American dollars), while expenditures were planned at 52,139,000,000 (5,347,000,000), including more than 1 billion dollars for military spending. Thus, the planned budget deficit was 11,102,000,000 rupees (1,139,000,000 dollars).

Pakistan is a backward agrarian country. Agriculture, which employs more than 55 percent of the population, produces 34 percent of gross national product, but still does not completely satisfy the food needs of the population. The bulk of the cropland (more than 80 percent) is used for food crops, the most important being wheat. Millet, barley, and corn are also raised. In the 1977-1978 fiscal year Pakistan produced 8,367,000 tons of wheat, 2,950,000 tons of rice, and 821,000 tons of maize. The most important industrial crop is cotton (575,000 tons in 1977-1978). Pakistan also raises sugar cane (30,100 tons), date palms, and tobacco.

Industry is little developed. The main sectors are shipbuilding, chemistry, textiles, cement, mining, and oil refining. The weakness of heavy industry is in large part a result of the fact that Pakistan does not have its own metallurgical base.

At the present time the country is building plants to produce steel, tractors, fertilizer, synthetic fibers, and the like. The largest project under construction in Pakistan is the Karachi Metallurgical Combine. More than 70 percent of the construction work has already been done at the plant which will produce 1.1 million tons of steel a year beginning in 1984-1985. As the foreign press observes, the metallurgical plant will enable Pakistan to fully meet its own metal needs.

Despite the increased pace of industrial development, Pakistan depends significantly on important industrial goods, chiefly from the United States, Great Britain, West Germany, and Japan. Machines, machine tools, means of transportation, cast iron, steel, petroleum products, paper, oil, and coal are imported.

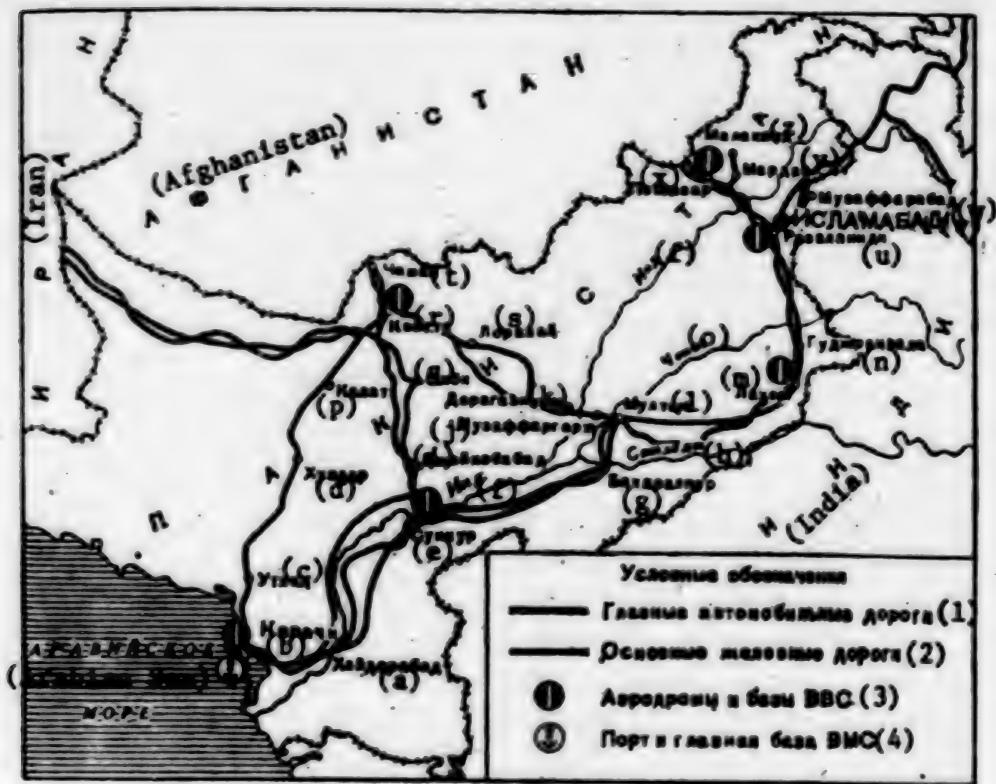


Figure 1. Principal Elements of the Infrastructure of Pakistan.

- Key:
- (1) Primary Vehicle Roads;
 - (2) Principal Railroads;
 - (3) Airfields and Air Bases;
 - (4) Port and Principal Navy Base;
 - (a) Hyderabad;
 - (b) Karachi;
 - (c) Utkhal;
 - (d) Khuzdar;
 - (e) Sukkur;
 - (f) Indus River;
 - (g) Bahawalpur;
 - (h) Sutlej River;
 - (i) Jacobabad;
 - (j) Muzaffargarh;
 - (k) Bera Ghazi Khan

- (1) Multan;
- (m) Lahore;
- (n) Gujranwala;
- (o) Chenab River;
- (p) Kalat;
- (q) Sibi;
- (r) Quetta;
- (s) Loralai;
- (t) Chaman;
- (u) Rawalpindi;
- (v) Islamabad;
- (w) Muzaffargarh;
- (x) Peshawar;
- (y) Mardan;
- (z) Malakand.

Route of Communication and Transportation. Pakistan occupies an important strategic position in the Middle East and on the Indian subcontinent. International routes of communication connecting Europe and Asia pass through Pakistan.

Railroad transportation is the foundation of the transportation system and does the largest volume of shipping within the country. Motor vehicle transportation supplements it, and in some regions replaces it. Sea and air routes, which have been developed in the last two decades, are used chiefly for international shipping. The capital appropriated for the development of transportation rose from 526 million Pakistani rupees in the 1971-1972 fiscal year to 4.38 billion rupees in 1978-1979. The rail network connects the principal cities of the country. In 1979 Pakistan had 983 locomotives, 2,892 passenger cars, and 36,321 freight cars. The total length of its rail network is 8,700 kilometers, including 7,690 kilometers of broad-gage (1,435 millimeter) track.

The main broad-gage lines run from Karachi through Sukkur to Peshawar and from Sukkur to Quetta. Only a few sectors have double track; more than 80 percent of the lines are single-track. The roads from Karachi to Kotri and from Rawalpindi to Lahore have been electrified.

Motor Vehicle Transportation. All the main administrative-political and industrial centers and the ports are connected by motor vehicle communications. The most highly developed road system is located in the northeastern and central parts of the country.

The total length of motor vehicle roads (as of 1978) was 56,800 kilometers; of this amount 36,400 was trunk roads with hard surfaces and 20,400 kilometers was improved dirt roads. The trunk motor vehicle roads are 10-12 meters wide with a 6-8 meter asphalt road and gravel or earth shoulders 1-2 meters wide. Secondary roads with asphalt surfaces are 8-10 meters wide with 5-7 meters of asphalt surface.

The Karakoram Highway and highways A-1 and A-2 are the main highways in the country. They are important strategically and economically.

The Karakoram Highway (opened in 1979) is an 820-kilometer two-lane strategic highway that connects the southwestern part of the Sinkiang-Uigur autonomous region of China with the capital of Pakistan through Kashmir. The highway gives China the possibility of shipping military freight to Pakistan, which includes materiel for the bandit gangs operating in Afghanistan.

Motor vehicle highway A-1 (526 kilometers) connects the city of Peshawar on the Afghan-Pakistani border with Vagakh on the Pakistani-Indian border and goes through Rawalpindi and Lahore. There are many manmade structures along the highway: bridges, tunnels, viaducts, and supported sections.

Motor vehicle highway A-2 (1,893 kilometers) begins from the Iranian border, passes through Quetta, Sukkur, and Lahore, and goes to the state border with India.

Other noteworthy motor vehicle roads are the road from Karachi through Hyderabad to Sukkur (511 kilometers), the road from Rawalpindi through Muzaffarabad to Uri (218 kilometers), and the road from Rawalpindi through Mansehra to Chilas (395 kilometers).

Maritime transportation is assigned a leading place in the economy. Up to 90 percent of foreign trade is shipped by sea. In 1979 the country had two companies, the Pakistani Navigation Corporation and the National Navigation Corporation. The corporations had a fleet of 48 ships: 41 dry-cargo ships (total tonnage of about 60,000 tons), four mixed passenger-cargo ships (36,600 tons), and three passenger ships (17,800 tons). Several more ships are chartered to carry on foreign trade shipping. In the current five-year plan the Government of Pakistan contemplated purchasing 21 freighters and three mixed cargo-passenger ships. At the present time agreements have already been signed for the purchase of 19 vessels.

The country has just one large port, Karachi. It is located on the coast of the Arabian Sea 100 kilometers from the mouth of the Indus River. Karachi has 26 docks with a total length of 26 kilometers, two ship repair yards, a ship building yard, three floating docks, and warehouses for transit cargo. It can receive up to 30 ships at one time. Cargo turnover exceeds 9 million tons. Plans call for work to begin on a further expansion of the port and for completion of the first phase, capable of handling 2 million tons of cargo turnover, by 1985. There is a naval base in the southwestern part of the port which can take ships of any class and repair them in its dry dock (up to and including cruisers).

Construction on the port of Kasim (40 kilometers southeast of Karachi) is continuing. By the end of 1980 its cargo turnover should be 6.16 million tons, increasing to 14.66 million tons by 1985.

Air Transportation. Civil aviation has existed in Pakistan since 1947, but this form of transportation has only really developed in recent times. For example, in the period from 1967 to 1970 the appropriation for its functioning was 700 million rupees, whereas 301 million rupees were appropriated for the 1978-1979 fiscal year alone. At the present time the state airline Pakistan International Airlines carries 68 percent of the passengers who arrive in the country by air.

Pakistan has more than 100 airports, but just half of them are suitable for use by all types of aircraft. The largest is the international airport in Karachi, which can take both civilian and military aircraft.

The Armed Forces. The Pakistani Armed Forces consist of regular armed forces, border troops, and auxiliary troops. The regular armed forces are recruited on a volunteer basis. According to reports in the foreign press the regular military has 438,600 men, including 408,000 in ground forces (including 29,000 in Azad Kashmir, the Kashmir territorial forces), 17,600 in the air force, and 13,000 in the navy.

The ground forces have two armored and 16 infantry divisions, 16 detached brigades, and five army air squadrons. According to reports in the foreign press, the ground forces have about 1,100 tanks (700 Chinese T-59 tanks and 250 American M47 and M48 tanks), 550 armored personnel carriers, more than 1,000 field artillery pieces of 75 caliber and greater, 270 mortars with calibers of

107 and 120 millimeters, a certain number of Cobra antitank guided missiles, six Krotal' antiaircraft missile systems, about 100 helicopters, and 70 army aviation planes. The ground forces reserve has about 500,000 members.

The air force has more than 250 military aircraft. Organizationally, the air force consists of one B-57B Canberra bomber squadron (11 planes), 12 fighter squadrons (55 Mirage aircraft, 140 Chinese F-6 planes and 40 F-86F's), and one reconnaissance squadron (10 Mirage 3RP aircraft). In addition there are two transport squadrons, training squadrons, and helicopter subunits. According to information in the journal FLIGHT the Government of Pakistan plans to purchase about 50 more French Mirage fighters. The air force reserve has 8,000 members.

The navy has six submarines (two Agosta and four Daphne types), six very small submarines, one cruiser, six destroyers, one frigate, three small antisub ships, four torpedo launches, 12 patrol boats, seven base minesweepers, and 15 naval aircraft and helicopters. The naval reserve has 5,000 members.

The border and auxiliary forces have 109,100 men: 65,000 in the border troops, 22,000 in the national guard, 15,000 in special detachments ("Rangers"), and about 7,000 for the coast guard and military police.

The United States and China are taking an active part in re-equipping and building up the Pakistani army. Military administrator Zia ul-Haq has acknowledged that since 1966 Chinese military aid has reached a figure of 2 billion dollars. Beijing has delivered about 700 tanks, more than 150 fighter planes, and other equipment to Pakistan. In the time between 1950 and 1979 the United States sold Pakistan armament worth 457.5 million dollars. Agence France Presse reported that modernized F-9 fighter bombers and ground-to-air missiles began arriving in Pakistan from China in November of 1980.

In connection with the events in Afghanistan and Iran, the United States has proposed delivering to Pakistan weapons worth another 400 million dollars urgent basis, assuring the Pakistani Government that this is just the beginning of new long-term agreements between the two countries.

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